

ccc gac ggg ctg ccc tgc aac ctg cgc aag ccg tgc aac cgg ccg tcg	520
Pro Asp Gly Leu Pro Cys Asn Leu Arg Lys Pro Cys Asn Arg Pro Ser	
91 96 101 106	
ggc ctc gag ccg cag ccg ggg gtc ttc gac tgc ctg cga gac gcc atg	568
Gly Leu Glu Pro Gln Pro Gly Val Phe Asp Cys Leu Arg Asp Ala Met	
107 112 117 122	
gtg cgt gac tac gtg cgc cag acg tgg aag ctg gag ggc gag gcc ctg	616
Val Arg Asp Tyr Val Arg Gln Thr Trp Lys Leu Glu Gly Glu Ala Leu	
123 128 133 138	
gag cag gcc atc atc agc cag gcc ccg cag gtg gag aag ctc att gct	664
Glu Gln Ala Ile Ile Ser Gln Ala Pro Gln Val Glu Lys Leu Ile Ala	
139 144 149 154	
acg acg gcc cac gag cgg atg ccc tgg tac cac agc agc ctg acg cgt	712
Thr Thr Ala His Glu Arg Met Pro Trp Tyr His Ser Ser Leu Thr Arg	
155 160 165 170	
gag gag gcc gag cgc aaa ctt tac tct ggg gcg cag acc gac ggc aag	760
Glu Glu Ala Glu Arg Lys Leu Tyr Ser Gly Ala Gln Thr Asp Gly Lys	
171 176 181 186	
ttc ctg ctg agg ccg cgg aag gag cag ggc aca tac gcc ctg tcc ctc	808
Phe Leu Leu Arg Pro Arg Lys Glu Gln Gly Thr Tyr Ala Leu Ser Leu	
187 192 197 202	
atc tat ggg aag acg gtg tac cac tac ctc atc agc caa gac aag gcg	856
Ile Tyr Gly Lys Thr Val Tyr His Tyr Leu Ile Ser Gln Asp Lys Ala	
203 208 213 218	
ggc aag tac tgc att ccc gag ggc acc aag ttt gag acg ctc tgg cag	904
Gly Lys Tyr Cys Ile Pro Glu Gly Thr Lys Phe Asp Thr Leu Trp Gln	
219 224 229 234	
ctg gtg gag tat ctg aag ctg aag gcg gac ggg ctc atc tac tgc ctg	952
Leu Val Glu Tyr Leu Lys Leu Lys Ala Asp Gly Leu Ile Tyr Cys Leu	
235 240 245 250	
aag gag gcc tgc ccc aac agc agt gcc agc aac gcc tca ggg gct gct	1000
Lys Glu Ala Cys Pro Asn Ser Ser Ala Ser Asn Ala Ser Gly Ala Ala	
251 256 261 266	
gct ccc aca ctc cca gcc cac cca tcc acg ttg act cat cct cag aga	1048
Ala Pro Thr Leu Pro Ala His Pro Ser Thr Leu Thr His Pro Gln Arg	
267 272 277 282	
cga atc gac acc ctc aac tca gat gga tac acc cct gag cca gca cgc	1096
Arg Ile Asp Thr Leu Asn Ser Asp Gly Tyr Thr Pro Glu Pro Ala Arg	
283 288 293 298	
ata acg tcc cca gac aaa ccg cgg ccg atg ccc atg gac acg agc gtg	1144
Ile Thr Ser Pro Asp Lys Pro Arg Pro Met Pro Met Asp Thr Ser Val	
299 304 309 314	
tat gag agc ccc tac agc gac cca gag gag ctc aag gac aag aag ctc	1192

Tyr Glu Ser Pro Tyr Ser Asp Pro Glu Glu Leu Lys Asp Lys Lys Leu	315.	320	325	330	
ttc ctg aag cgc gat aac ctc ctc ata gct gac att gaa ctt ggc tgc					1240
Phe Leu Lys Arg Asp Asn Leu Leu Ile Ala Asp Ile Glu Leu Gly Cys	331	336	341	346	
ggc aac ttt ggc tca gtg cgc cag ggc gtg tac cgc atg cgc aag aag					1288
Gly Asn Phe Gly Ser Val Arg Gln Gly Val Tyr Arg Met Arg Lys Lys	347	352	357	362	
cag atc gac gtg gcc atc aag gtg ctg aag cag ggc acg gag aag gca					1336
Gln Ile Asp Val Ala Ile Lys Val Leu Lys Gln Gly Thr Glu Lys Ala	363	368	373	378	
gac acg gaa gag atg atg cgc gag gcg cag atc atg cac cag ctg gac					1384
Asp Thr Glu Glu Met Met Arg Glu Ala Gln Ile Met His Gln Leu Asp	379	384	389	394	
aac ccc tac atc gtg cgg ctc att ggc gtc tgc cag gcc gag gcc ctc					1432
Asn Pro Tyr Ile Val Arg Leu Ile Gly Val Cys Gln Ala Glu Ala Leu	395	400	405	410	
atg ctg gtc atg gag atg gct ggg ggc ggg ccg ctg cac aag ttc ctg					1480
Met Leu Val Met Glu Met Ala Gly Gly Gly Pro Leu His Lys Phe Leu	411	416	421	426	
gtc ggc aag agg gag gag atc cct gtg agc aat gtg gcc gag ctg ctg					1528
Val Gly Lys Arg Glu Glu Ile Pro Val Ser Asn Val Ala Glu Leu Leu	427	432	437	442	
cac cag gtg tcc atg ggg atg aag tac ctg gag gag aag aac ttt gtg					1576
His Gln Val Ser Met Gly Met Lys Tyr Leu Glu Glu Lys Asn Phe Val	443	448	453	458	
cac cgt gac ctg gcg gcc cgc aac gtc ctg ctg gtt aac cgg cac tac					1624
His Arg Asp Leu Ala Ala Arg Asn Val Leu Leu Val Asn Arg His Tyr	459	464	469	474	
gcc aag atc agc gac ttt ggc ctc tcc aaa gca ctg ggt gcc gac gac					1672
Ala Lys Ile Ser Asp Phe Gly Leu Ser Lys Ala Leu Gly Ala Asp Asp	475	480	485	490	
agc tac tac act gcc cgc tca gca ggg aag tgg ccg ctc aag tgg tac					1720
Ser Tyr Tyr Thr Ala Arg Ser Ala Gly Lys Trp Pro Leu Lys Trp Tyr	491	496	501	506	
gca ccc gaa tgc atc aac ttc cgc aag ttc tcc agc cgc agc gat gtc					1768
Ala Pro Glu Cys Ile Asn Phe Arg Lys Phe Ser Ser Arg Ser Asp Val	507	512	517	522	
tgg agc tat ggg gtc acc atg tgg gag gcc ttg tcc tac ggc cag aag					1816
Trp Ser Tyr Gly Val Thr Met Trp Glu Ala Leu Ser Tyr Gly Gln Lys	523	528	533	538	
ccc tac aag aag atg aaa ggg ccg gag gtc atg gcc ttc atc gag cag					1864
Pro Tyr Lys Lys Met Lys Gly Pro Glu Val Met Ala Phe Ile Glu Gln					

539	544	549	554	
ggc aag cgg atg gag tgc cca cca gag tgt cca ccc gaa ctg tac gca				1912
Gly Lys Arg Met Glu Cys Pro Pro Glu Cys Pro Pro Glu Leu Tyr Ala				
555	560	565	570	
ctc atg agt gac tgc tgg atc tac aag tgg gag gat cgc ccc gac ttc				1960
Leu Met Ser Asp Cys Trp Ile Tyr Lys Trp Glu Asp Arg Pro Asp Phe				
571	576	581	586	
ctg acc gtg gag cag cgc atg cga gcc tgt tac tac agc ctg gcc agc				2008
Leu Thr Val Glu Gln Arg Met Arg Ala Cys Tyr Tyr Ser Leu Ala Ser				
587	592	597	602	
aag gtg gaa ggg ccc cca ggc agc aca cag aag gct gag gct gcc tgt				2056
Lys Val Glu Gly Pro Pro Gly Ser Thr Gln Lys Ala Glu Ala Ala Cys				
603	608	613	618	
gcc tga gctcccgctg cccaggggag ccctccacgc cggctcttcc ccaccctcag				2112
Ala *				
619				
ccccaccca ggtcctgcag tctggctgag ccctgcttgg ttgtctccac acacagctgg				2172
gctgtggtag ggggtgtctc aggccacacc ggccttgcat tgccctgectg gccccctgtc				2232
ctctctggct ggggagcagg gaggtccggg aggggtgcggc tgtgcagcct gtcctgggct				2292
ggtggctccc ggagggccct gagctgaggg cattgcttac acggatgcct tcccctgggc				2352
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gcagctagaa cagcctggtc aggagcgtaa cggagtgggtg cgccaacgtg agaggaaacc	180
cgtgcgcggc tgcgctttcc tgtccccaag ccgttctaga cgcgggaaaa atg ctt	236
	Met Leu

tct gaa agc agc tcc ttt ttg aag ggt gtg atg ctt gga agc att ttc	284
Ser Glu Ser Ser Ser Phe Leu Lys Gly Val Met Leu Gly Ser Ile Phe	
3 8 13 18	
tgt gct ttg atc act atg cta gga cac att agg att ggt cat gga aat	332
Cys Ala Leu Ile Thr Met Leu Gly His Ile Arg Ile Gly His Gly Asn	
19 24 29 34	
aga atg cac cac cat gag cat cat cac cta caa gct cct aac aaa gaa	380
Arg Met His His His Glu His His His Leu Gln Ala Pro Asn Lys Glu	
35 40 45 50	
gat atc ttg aaa att tca gag gat gag cgc atg gag ctc agt aag agc	428
Asp Ile Leu Lys Ile Ser Glu Asp Glu Arg Met Glu Leu Ser Lys Ser	
51 56 61 66	
ttt cga gta tac tgt att atc ctt gta aaa ccc aaa gat gtg agt ctt	476
Phe Arg Val Tyr Cys Ile Ile Leu Val Lys Pro Lys Asp Val Ser Leu	
67 72 77 82	
tgg gct gca gta aag gag act tgg acc aaa cac tgt gac aaa gca gag	524
Trp Ala Ala Val Lys Glu Thr Trp Thr Lys His Cys Asp Lys Ala Glu	
83 88 93 98	
ttc ttc agt tct gaa aat gtt aaa gag ttt gag tca att aat atg gac	572
Phe Phe Ser Ser Glu Asn Val Lys Glu Phe Glu Ser Ile Asn Met Asp	
99 104 109 114	
aca aat gac atg tgg tta atg atg aga aaa gct tac aaa tac gcc ttt	620
Thr Asn Asp Met Trp Leu Met Met Arg Lys Ala Tyr Lys Tyr Ala Phe	
115 120 125 130	
gat aag tat aga gac caa tac aac tgg ttc ttc ctt gca cgc ccc act	668
Asp Lys Tyr Arg Asp Gln Tyr Asn Trp Phe Phe Leu Ala Arg Pro Thr	
131 136 141 146	
acg ttt gct atc att gaa aac cta aag tat ttt ttg tta aaa aag gat	716
Thr Phe Ala Ile Ile Glu Asn Leu Lys Tyr Phe Leu Leu Lys Lys Asp	
147 152 157 162	
cca tca cag cct ttc tat cta ggc cac act ata aaa tct gga gac ctt	764
Pro Ser Gln Pro Phe Tyr Leu Gly His Thr Ile Lys Ser Gly Asp Leu	
163 168 173 178	
gaa tat gtg ggt atg gaa gga gga att gtc tta agt gta gaa tca atg	812
Glu Tyr Val Gly Met Glu Gly Gly Ile Val Leu Ser Val Glu Ser Met	
179 184 189 194	
aaa aga ctt aac agc ctt ctc aat atc cca gaa aag tgt cct gaa cag	860
Lys Arg Leu Asn Ser Leu Leu Asn Ile Pro Glu Lys Cys Pro Glu Gln	
195 200 205 210	
gga ggg atg att tgg aag ata tct gaa gat aaa cag cta gca gtt tgc	908
Gly Gly Met Ile Trp Lys Ile Ser Glu Asp Lys Gln Leu Ala Val Cys	
211 216 221 226	
ctg aaa tat gct gga gta ttt gca gaa aat gca gaa gat gct gat gga	956

gat ctt gga gaa att cat tca agg ctt ttg gat cac aga cca gtt att	198
Asp Leu Gly Glu Ile His Ser Arg Leu Leu Asp His Arg Pro Val Ile	
38 43 48 53	
caa ggt gaa act cgt tat ttt gta aaa gaa ttt gaa gaa aaa cgt ggt	246
Gln Gly Glu Thr Arg Tyr Phe Val Lys Glu Phe Glu Glu Lys Arg Gly	
54 59 64 69	
ctt cga gaa atg cga gtt ctt gaa aat ttg aag aac atg atc cat gaa	294
Leu Arg Glu Met Arg Val Leu Glu Asn Leu Lys Asn Met Ile His Glu	
70 75 80 85	
aca aat gaa cat act ctt ccc aaa tgt aga gac aca atg cgg gac agc	342
Thr Asn Glu His Thr Leu Pro Lys Cys Arg Asp Thr Met Arg Asp Ser	
86 91 96 101	
ctc agc cag gtt ctc cag aga ttg caa gca gct aat gac tca gtc tgt	390
Leu Ser Gln Val Leu Gln Arg Leu Gln Ala Ala Asn Asp Ser Val Cys	
102 107 112 117	
aga ctc caa cag agg gaa cag gaa cga aaa aag att cat agt gac cac	438
Arg Leu Gln Gln Arg Glu Gln Glu Arg Lys Lys Ile His Ser Asp His	
118 123 128 133	
tta gta gct agt gag aaa cag cat atg ctc cag tgg gac aac ttc atg	486
Leu Val Ala Ser Glu Lys Gln His Met Leu Gln Trp Asp Asn Phe Met	
134 139 144 149	
aag gag caa ccc aac aaa agg gct gaa gtg gat gaa gag cac aga aaa	534
Lys Glu Gln Pro Asn Lys Arg Ala Glu Val Asp Glu Glu His Arg Lys	
150 155 160 165	
gcc atg gaa agg ctt aaa gaa caa tat gct gag atg gag aag gac cta	582
Ala Met Glu Arg Leu Lys Glu Gln Tyr Ala Glu Met Glu Lys Asp Leu	
166 171 176 181	
gcg aaa ttt tca acc ttt taa ga acttgaacca caacaatcac aaactaatga	635
Ala Lys Phe Ser Thr Phe *	
182 187	
gaagatgttc acctctctcc tgaaaactat tcccaccaga cgttttagcc tctgcttcaa	695
gcttagcaat atattcagtg gcactcttat atcagaagaa agaagtttct actggcattc	755
tgattggata tttaaagaag ggtgccacat tttccagct ttaagtgcct atatatgatt	815
atttgaatga agaggagt agaggaaaat ggaatcaata tactctttgt tagtcagaat	875
tgatcatctt ttccattgat tagctcagag aactgtaggt atagacttct tagaaagata	935
atttcattca tttctataca gggttaacaa tagtttatta ttgtggctta atgggaaggt	995
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tgagtaatgt agacaaaaaa aaaaaaa	1082

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 <213> Homo sapiens

<220>
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 tcccgggtggg gaacgtgaga tcagcggggg cgtggactga tctgaaaggg cagagtggag 180
 tcgcattgtg aggggggtggg caagcgggtct gcgaagcctc ggcccgcagg gtacatctga 240
 aggatcctta attaaattaa tccccccccc cccccaaaat agtgggtgatg tcatgcaggc 300
 aag atg gcg gaa ggg gag gac gtg gga tgg tgg cgg agc tgg ctg cag 348
 Met Ala Glu Gly Glu Asp Val Gly Trp Trp Arg Ser Trp Leu Gln
 1 5 10
 cag agc tac caa gca gtc aaa gag aag tcc tct gaa gcc ttg gag ttt 396
 Gln Ser Tyr Gln Ala Val Lys Glu Lys Ser Ser Glu Ala Leu Glu Phe
 16 21 26 31
 atg aag cgg gac ctg acg gag ttt acc cag gtg gtg cag cat gac acg 444
 Met Lys Arg Asp Leu Thr Glu Phe Thr Gln Val Val Gln His Asp Thr
 32 37 42 47
 gcc tgt acc atc gca gcc acg gcc agc gtg gtc aag gag aag ctg gct 492
 Ala Cys Thr Ile Ala Ala Thr Ala Ser Val Val Lys Glu Lys Leu Ala
 48 53 58 63
 acg gaa ggc tcc tca gga gca aca gag aag atg aag aaa ggg tta tct 540
 Thr Glu Gly Ser Ser Gly Ala Thr Glu Lys Met Lys Lys Gly Leu Ser
 64 69 74 79
 gac ttc cta ggg gtg atc tca gac acc ttt gcc cct tcg cca gac aaa 588
 Asp Phe Leu Gly Val Ile Ser Asp Thr Phe Ala Pro Ser Pro Asp Lys
 80 85 90 95
 acc atc gac tgc gat gtc atc acc ctg atg ggc aca ccg tct ggc aca 636
 Thr Ile Asp Cys Asp Val Ile Thr Leu Met Gly Thr Pro Ser Gly Thr
 96 101 106 111
 gct gag ccc tat gat ggc acc aag gct cgc ctc tat agc ctg cag tcg 684
 Ala Glu Pro Tyr Asp Gly Thr Lys Ala Arg Leu Tyr Ser Leu Gln Ser
 112 117 122 127
 gac cca gca acc tac tgt aat gaa cca gat ggg ccc ccg gaa ttg ttt 732
 Asp Pro Ala Thr Tyr Cys Asn Glu Pro Asp Gly Pro Pro Glu Leu Phe

128	133	138	143	
gac gcc tgg ctt tcc cag ttc tgc ttg gag gag aag aag ggg gag atc				780
Asp Ala Trp Leu Ser Gln Phe Cys Leu Glu Glu Lys Lys Gly Glu Ile				
144	149	154	159	
tca gag ctc ctt gta ggc agc ccc tcc atc cgg gcc ctc tac acc aag				828
Ser Glu Leu Leu Val Gly Ser Pro Ser Ile Arg Ala Leu Tyr Thr Lys				
160	165	170	175	
atg gtt cca gca gct gtt tcc cat tca gaa ttc tgg cat cgg tat ttc				876
Met Val Pro Ala Ala Val Ser His Ser Glu Phe Trp His Arg Tyr Phe				
176	181	186	191	
tat aaa gtc cat cag tta gag cag gag cag gcc cgg agg gac gcc ctg				924
Tyr Lys Val His Gln Leu Glu Gln Glu Gln Ala Arg Arg Asp Ala Leu				
192	197	202	207	
aag cag cgg gcg gaa cag agc atc tct gaa gag ccc gcc tgg gag gag				972
Lys Gln Arg Ala Glu Gln Ser Ile Ser Glu Glu Pro Gly Trp Glu Glu				
208	213	218	223	
gag gaa gag gag ctc atg ggc att tca ccc ata tct cca aaa gag gca				1020
Glu Glu Glu Glu Leu Met Gly Ile Ser Pro Ile Ser Pro Lys Glu Ala				
224	229	234	239	
aag gtt cct gtg gcc aaa att tct aca ttc cct gaa gga gaa cct ggc				1068
Lys Val Pro Val Ala Lys Ile Ser Thr Phe Pro Glu Gly Glu Pro Gly				
240	245	250	255	
ccc cag agc ccc tgt gaa gag aat ctg gtg act tca gtt gag ccc cca				1116
Pro Gln Ser Pro Cys Glu Glu Asn Leu Val Thr Ser Val Glu Pro Pro				
256	261	266	271	
gca gag gtg act cca tca gag agc agt gag agc atc tcc ctc gtg aca				1164
Ala Glu Val Thr Pro Ser Glu Ser Ser Glu Ser Ile Ser Leu Val Thr				
272	277	282	287	
cag atc gcc aac ccg gcc act gca cct gag gca cga gtg cta ccc aag				1212
Gln Ile Ala Asn Pro Ala Thr Ala Pro Glu Ala Arg Val Leu Pro Lys				
288	293	298	303	
gac ctg tcc caa aag ctg cta gag gca tcc ttg gag gaa cag ggc ctg				1260
Asp Leu Ser Gln Lys Leu Leu Glu Ala Ser Leu Glu Glu Gln Gly Leu				
304	309	314	319	
gct gtg gat gtg ggt gag act gga ccc tca ccc cct att cac tcc aag				1308
Ala Val Asp Val Gly Glu Thr Gly Pro Ser Pro Pro Ile His Ser Lys				
320	325	330	335	
ccc cta acg cct gct ggc cac acc ggc ggc cca gag ccc agg cct cca				1356
Pro Leu Thr Pro Ala Gly His Thr Gly Gly Pro Glu Pro Arg Pro Pro				
336	341	346	351	
gcc aga gta gag act ctg agg gag gag gcg ccc aca gac tta cgg gtg				1404
Ala Arg Val Glu Thr Leu Arg Glu Glu Ala Pro Thr Asp Leu Arg Val				
352	357	362	367	

ttt gag ctg aac tcg gat agt ggg aag tct aca ccc tcc aac aat gga	1452
Phe Glu Leu Asn Ser Asp Ser Gly Lys Ser Thr Pro Ser Asn Asn Gly	
368 373 378 383	
aag aaa ggc tca agc acg gac atc agt gag gac tgg gag aaa gac ttt	1500
Lys Lys Gly Ser Ser Thr Asp Ile Ser Glu Asp Trp Glu Lys Asp Phe	
384 389 394 399	
gac ttg gac atg act gaa gag gag gtg cag atg gca ctt tcc aaa gtg	1548
Asp Leu Asp Met Thr Glu Glu Glu Val Gln Met Ala Leu Ser Lys Val	
400 405 410 415	
gat gcc tcc ggg gag gtg agt ggg cct ggt ggg tca gag gga agc gag	1596
Asp Ala Ser Gly Glu Val Ser Gly Pro Gly Gly Ser Glu Gly Ser Glu	
416 421 426 431	
cct aat ggt cct ggg tgt gag agc tct ccc cag cca gcc cag ctg tcc	1644
Pro Asn Gly Pro Gly Cys Glu Ser Ser Pro Gln Pro Ala Gln Leu Ser	
432 437 442 447	
cct cag gag ggt ccc tgc tcc tgt ctg agg tga caggtggt gggaaaggag	1695
Pro Gln Glu Gly Pro Cys Ser Cys Leu Arg *	
448 453 458	
ctggagcttc ctgctcagac ccacaacatt ggtcatcagc aggctgcact tttcctcagt	1755
tccagggtgg atagaggggc aagttcttga ccttagctct gtatcaaaat tgctgagaa	1815
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tcccgggtggg gaacgtgaga tcagcggggg cgtggactga tctgaaaggg cagagtggag	180
tcgcattgtg aggggggtggg caagcgggtct gcgaagcctc ggcccgcagg gtacatctga	240
aggatcctta attaaattaa tccccccccc cccccaaaat agtggtgatg tcatgcaggc	300

aag	atg	gcg	gaa	ggg	gag	gac	gtg	gga	tgg	tgg	cgg	agc	tgg	ctg	cag	348
Met	Ala	Glu	Gly	Glu	Asp	Val	Gly	Trp	Trp	Arg	Ser	Trp	Leu	Gln		
1				5					10							
cag	agc	tac	caa	gca	gtc	aaa	gag	aag	tcc	tct	gaa	gcc	ttg	gag	ttt	396
Gln	Ser	Tyr	Gln	Ala	Val	Lys	Glu	Lys	Ser	Ser	Glu	Ala	Leu	Glu	Phe	
16				21					26					31		
atg	aag	cgg	gac	ctg	acg	gag	ttt	acc	cag	gtg	gtg	cag	cat	gac	acg	444
Met	Lys	Arg	Asp	Leu	Thr	Glu	Phe	Thr	Gln	Val	Val	Gln	His	Asp	Thr	
32				37					42					47		
gcc	tgt	acc	atc	gca	gcc	acg	gcc	agc	gtg	gtc	aag	gag	aag	ctg	gct	492
Ala	Cys	Thr	Ile	Ala	Ala	Thr	Ala	Ser	Val	Val	Lys	Glu	Lys	Leu	Ala	
48				53					58					63		
att	gca	gcc	tgt	tcc	cgg	ggc	gct	tgc	ttc	ctc	tgc	ccg	ttc	tct	ata	540
Ile	Ala	Ala	Cys	Ser	Arg	Gly	Ala	Cys	Phe	Leu	Cys	Pro	Phe	Ser	Ile	
64				69					74					79		
cag	acg	gaa	ggc	tcc	tca	gga	gca	aca	gag	aag	atg	aag	aaa	ggg	tta	588
Gln	Thr	Glu	Gly	Ser	Ser	Gly	Ala	Thr	Glu	Lys	Met	Lys	Lys	Gly	Leu	
80				85					90					95		
tct	gac	ttc	cta	ggg	gtg	atc	tca	gac	acc	ttt	gcc	cct	tcg	cca	gac	636
Ser	Asp	Phe	Leu	Gly	Val	Ile	Ser	Asp	Thr	Phe	Ala	Pro	Ser	Pro	Asp	
96				101					106					111		
aaa	acc	atc	gac	tgc	gat	gtc	atc	acc	ctg	atg	ggc	aca	ccg	tct	ggc	684
Lys	Thr	Ile	Asp	Cys	Asp	Val	Ile	Thr	Leu	Met	Gly	Thr	Pro	Ser	Gly	
112				117					122					127		
aca	gct	gag	ccc	tat	gat	ggc	acc	aag	gct	cgc	ctc	tat	agc	ctg	cag	732
Thr	Ala	Glu	Pro	Tyr	Asp	Gly	Thr	Lys	Ala	Arg	Leu	Tyr	Ser	Leu	Gln	
128				133					138					143		
tcg	gac	cca	gca	acc	tac	tgt	aat	gaa	cca	gat	ggg	ccc	ccg	gaa	ttg	780
Ser	Asp	Pro	Ala	Thr	Tyr	Cys	Asn	Glu	Pro	Asp	Gly	Pro	Pro	Glu	Leu	
144				149					154					159		
ttt	gac	gcc	tgg	ctt	tcc	cag	ttc	tgc	ttg	gag	gag	aag	aag	ggg	gag	828
Phe	Asp	Ala	Trp	Leu	Ser	Gln	Phe	Cys	Leu	Glu	Glu	Lys	Lys	Gly	Glu	
160				165					170					175		
atc	tca	gag	ctc	ctt	gta	ggc	agc	ccc	tcc	atc	cgg	gcc	ctc	tac	acc	876
Ile	Ser	Glu	Leu	Leu	Val	Gly	Ser	Pro	Ser	Ile	Arg	Ala	Leu	Tyr	Thr	
176				181					186					191		
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Lys	Met	Val	Pro	Ala	Ala	Val	Ser	His	Ser	Glu	Phe	Trp	His	Arg	Tyr	
192				197					202					207		
ttc	tat	aaa	gtc	cat	cag	tta	gag	cag	gag	cag	gcc	cgg	agg	gac	gcc	972
Phe	Tyr	Lys	Val	His	Gln	Leu	Glu	Gln	Glu	Gln	Ala	Arg	Arg	Asp	Ala	
208				213					218					223		

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Ser	Pro	Gln	Glu	Gly	Pro	Cys	Ser	Cys	Leu	Arg	*					
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Thr Gly Ser Ala Asn Met Thr Lys Lys Lys Val Ser Gln Lys Lys Gln	
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Arg Gly Arg Pro Ser Ser Gln Pro Arg Arg Asn Ile Val Gly Cys Arg	
38 43 48 53	
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Gly Thr Val Leu Asp Gln Val Pro Ile Asn Pro Ser Leu Tyr Leu Val	
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Lys Tyr Asp Gly Ile Asp Cys Val Tyr Gly Leu Glu Leu His Arg Asp	
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Pro Gly Arg Gly Arg Cys Pro Asp Cys Gly Ser Thr Glu Leu Val Glu
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Val Val Thr Glu Gly Val Leu Thr Thr Thr Phe Ser Asp Glu Gly Asn
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ctc cga gag gta aca tat tcc cga agc aca ggg gaa aac gaa caa gtt      309
Leu Arg Glu Val Thr Tyr Ser Arg Ser Thr Gly Glu Asn Glu Gln Val
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Ser Arg Ser Gln Gln Arg Gly Leu Arg Arg Val Arg Asp Leu Cys Arg
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gtt ctg cag ttg cca cca aca ttt gag gat acc gcg gtt gcc tac tac      405
Val Leu Gln Leu Pro Pro Thr Phe Glu Asp Thr Ala Val Ala Tyr Tyr
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caa cag gca tat cgg cac tct ggc atc cga gcg gcc agg ctg caa aag      453
Gln Gln Ala Tyr Arg His Ser Gly Ile Arg Ala Ala Arg Leu Gln Lys
 98                               103                               108                               113

aag gag gtg ttg gtt ggg tgc tgc gtc tta atc acc tgc cga cag cat      501
Lys Glu Val Leu Val Gly Cys Cys Val Leu Ile Thr Cys Arg Gln His
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aac tgg ccc cta aca atg ggg gcc atc tgc acg ctg ttg tat gca gat      549
Asn Trp Pro Leu Thr Met Gly Ala Ile Cys Thr Leu Leu Tyr Ala Asp
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Val Glu Asp Lys Glu Lys Met Leu Ser Arg Thr Met Gln Leu Val Glu				
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Arg Leu Ser Cys Ser Leu Ala Arg Phe Cys Lys Leu Ala Asn Val Asp				
242	247	252	257	
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Lys Arg Ser Val Val Lys His Ile Gly Asp Leu Leu Gln His Arg Gln				
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Pro Ala Leu Leu Leu Pro Pro Cys Met Leu Lys Ser Pro Lys Arg Ile				
354	359	364	369	
tgc cct gta ccc cct gtc tcc act gtc act gga gat gag aac att tct				1269
Cys Pro Val Pro Pro Val Ser Thr Val Thr Gly Asp Glu Asn Ile Ser				
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Asp Ser Glu Ile Glu Gln Tyr Leu Arg Thr Pro Gln Glu Val Arg Asp				
386	391	396	401	

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Glu Val Leu Arg Arg Lys Phe Ala Leu Lys Glu Glu Asp Ile Ser Arg	
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Lys Gly Asn *	
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 97 102 107 112
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 Gly Gln Asn Ser Leu Leu His *
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Pro Gly Thr Glu Gly Gln Gln Gln Val His Gly Glu Lys Lys Glu Ala
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Glu Gly Met Lys Ala Gly Ala Phe Pro Pro Ala Pro Thr Ala Val Pro
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ctc cac cct agc tgg gcc tat gtg gac ccc agc agc agc tcc agc tat      421
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Trp Asp Asp Gln Lys Val Arg Arg Val Phe Val Arg Lys Val Tyr Thr
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Ile Leu Leu Ile Gln Leu Leu Val Thr Leu Ala Val Val Ala Leu Phe
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act ttc tgt gac cct gtc aag gac tat gtc cag gcc aac cca ggc tgg      613
Thr Phe Cys Asp Pro Val Lys Asp Tyr Val Gln Ala Asn Pro Gly Trp
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Tyr Trp Ala Ser Tyr Ala Val Phe Phe Ala Thr Tyr Leu Thr Leu Ala
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tgc tgt tct gga ccc agg agg cat ttc ccc tgg aac ctg att ctc ctg      709
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Met Gly Leu Leu Ala Phe Leu
1 5
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Lys Thr Gln Phe Val Leu His Leu Leu Val Gly Phe Val Phe Val Val
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agt ggt ctg gtc atc aac ttc gtc cag ctg tgc acg ctg gcg ctc tgg 327
Ser Gly Leu Val Ile Asn Phe Val Gln Leu Cys Thr Leu Ala Leu Trp
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ccg gtc agc aag cag ctc tac cgc cgc ctc aac tgc cgc ctc gcc tac 375
Pro Val Ser Lys Gln Leu Tyr Arg Arg Leu Asn Cys Arg Leu Ala Tyr
40 45 50 55
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Ser Leu Trp Ser Gln Leu Val Met Leu Leu Glu Trp Trp Ser Cys Thr
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Glu Cys Thr Leu Phe Thr Asp Gln Ala Thr Val Glu Arg Phe Gly Lys
72 77 82 87
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Glu His Ala Val Ile Ile Leu Asn His Asn Phe Glu Ile Asp Phe Leu
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tgt ggg tgg acc atg tgt gag cgc ttc gga gtg ctg ggg agc tcc aag 567
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Val Leu Ala Lys Lys Glu Leu Leu Tyr Val Pro Leu Ile Gly Trp Thr
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Trp Tyr Phe Leu Glu Ile Val Phe Cys Lys Arg Lys Trp Glu Glu Asp
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tac atg tgg ttt ctc ctg tac tgc gag ggg acg cgc ttc acg gag acc 759
Tyr Met Trp Phe Leu Leu Tyr Cys Glu Gly Thr Arg Phe Thr Glu Thr
168 173 178 183
aag cac cgc gtt agc atg gag gtg gcg gct gct aag ggg ctt cct gtc 807

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Leu	Lys	Tyr	His	Leu	Leu	Pro	Arg	Thr	Lys	Gly	Phe	Thr	Thr	Ala	Val		
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Lys	Cys	Leu	Arg	Gly	Thr	Val	Ala	Ala	Val	Tyr	Asp	Val	Thr	Leu	Asn		
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Phe	Arg	Gly	Asn	Lys	Asn	Pro	Ser	Leu	Leu	Gly	Ile	Leu	Tyr	Gly	Lys		
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Lys	Tyr	Glu	Ala	Asp	Met	Cys	Val	Arg	Arg	Phe	Pro	Leu	Glu	Asp	Ile		
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cgg	ctg	gat	gaa	aag	gaa	gca	gct	cag	tgg	ctt	cat	aaa	ctg	tac	cag		1047
Pro	Leu	Asp	Glu	Lys	Glu	Ala	Ala	Gln	Trp	Leu	His	Lys	Leu	Tyr	Gln		
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Leu	Ser	Trp	Ala	Thr	Ile	Leu	Leu	Ser	Pro	Leu	Phe	Ser	Phe	Val	Leu		
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ggc	gtc	ttt	gcc	agc	gga	tca	cct	ctc	ctg	atc	ctg	act	ttc	ttg	ggg		1239
Gly	Val	Phe	Ala	Ser	Gly	Ser	Pro	Leu	Leu	Ile	Leu	Thr	Phe	Leu	Gly		
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Phe	Val	Gly	Ala	Gly	Asn	Gly	His	Cys	Arg	*							
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Met Ala Thr Asn Phe Ser Asp
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Tyr Arg Arg Cys Trp Leu Val Phe Arg Lys Ser Ser Ser Lys Gly Pro
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Gln Arg Leu Glu Lys Tyr Pro Asp Glu Lys Ser Val Cys Leu Arg Gly
40 45 50 55
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Cys Pro Lys Val Thr Glu Ile Ser Asn Val Lys Cys Val Thr Arg Leu
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104 109 114 119

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Ser Leu Gly Glu Pro Asp Leu Leu Ala Pro Gly Val Gln Cys Glu Gln	
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Ile Ala Glu Ala Ser Ser Tyr Ala Gly Glu Gly Tyr Gly Ala Ala Gln	
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Lys Pro Ser Gln Gly Asp Ser Ser Glu Ala Lys Thr Pro Ser Gln *	
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 Ala Leu Glu Val Gly Thr Gly Phe Thr Pro Leu Ser Gly Ala Arg Ala
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 Asn Phe Phe His Glu Ala Ser Cys Asp Tyr Thr Ser Pro Thr Cys Asp
 33 38 43 48
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 Met Val Thr Ala Trp Asp Gly Gly Gln Asp Pro Leu Met Val Glu Glu
 49 54 59 64
 atg aag acc cag aaa ggc aag ggg ttt ggc cta ggg agc ctg gca att 240
 Met Lys Thr Gln Lys Gly Lys Gly Phe Gly Leu Gly Ser Leu Ala Ile
 65 70 75 80
 gat tgg tcc cca gcc aga agc agt gaa gct tct cat gac agc cct ggg 288
 Asp Trp Ser Pro Ala Arg Ser Ser Glu Ala Ser His Asp Ser Pro Gly
 81 86 91 96
 gat gag atg ggt aga tgg gag ctg ggt agc agc aca ggg tgt tgc ctt 336
 Asp Glu Met Gly Arg Trp Glu Leu Gly Ser Ser Thr Gly Cys Cys Leu

97	102	107	112	
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Trp Gln Tyr Asp Arg His Thr His His Ile Tyr Val Pro Ala Ser Gly				
113	118	123	128	
aag ggg gag ggg aaa ggg agg gga ggg cat gct tct ctc ttt cag ggc				432
Lys Gly Glu Gly Lys Gly Arg Gly Gly His Ala Ser Leu Phe Gln Gly				
129	134	139	144	
atg acc cag aag ctg tac aca tca gtg tac aca ttg cat ggc cac act				480
Met Thr Gln Lys Leu Tyr Thr Ser Val Tyr Thr Leu His Gly His Thr				
145	150	155	160	
cag ctg caa gtt aac agt ggt tct gac ggt gag tgc agt gcc aat gat				528
Gln Leu Gln Val Asn Ser Gly Ser Asp Gly Glu Cys Ser Ala Asn Asp				
161	166	171	176	
gga gat ggt ggt ggt gct ggt gtt gac cat aag atg gca gtt atg gtg				576
Gly Asp Gly Gly Gly Ala Gly Val Asp His Lys Met Ala Val Met Val				
177	182	187	192	
gtg gta gtg gtg aca ctg ttg gtg atg atg act tat gat ggg tgg gat				624
Val Val Val Val Thr Leu Leu Val Met Met Thr Tyr Asp Gly Trp Asp				
193	198	203	208	
gtc tgt gtg gtc aca gag tac ctg tgg gag ggc aat tct gac ccc aag				672
Val Cys Val Val Thr Glu Tyr Leu Trp Glu Gly Asn Ser Asp Pro Lys				
209	214	219	224	
gta gga agc agt gat ccg gta att cca ggc acc aag gca gat aaa aag				720
Val Gly Ser Ser Asp Pro Val Ile Pro Gly Thr Lys Ala Asp Lys Lys				
225	230	235	240	
acc aag atg ggg ccc atg agt gag gag gac aag aga gaa agg aga agt				768
Thr Lys Met Gly Pro Met Ser Glu Glu Asp Lys Arg Glu Arg Arg Ser				
241	246	251	256	
ttg ggt gta aat ccc aga gat tgt tca tca ttg gat gac agt tct cca				816
Leu Gly Val Asn Pro Arg Asp Cys Ser Ser Leu Asp Asp Ser Ser Pro				
257	262	267	272	
tca ggg tct gca gtc ctc tac cct gga ctt gct gca tcc tgg agc ccc				864
Ser Gly Ser Ala Val Leu Tyr Pro Gly Leu Ala Ala Ser Trp Ser Pro				
273	278	283	288	
cag cag tca ggt acc ggc tct cag aac tgc ctg cat ccc att ggc ctg				912
Gln Gln Ser Gly Thr Gly Ser Gln Asn Cys Leu His Pro Ile Gly Leu				
289	294	299	304	
agc tgc tgt ctg cca ggg ctg ctg gca gga ctt atc agt ccc tgc tct				960
Ser Cys Cys Leu Pro Gly Leu Leu Ala Gly Leu Ile Ser Pro Cys Ser				
305	310	315	320	
tcc gac ccc aca aag ctc agt tac tgc gtc att gct act tac cag ggg				1008
Ser Asp Pro Thr Lys Leu Ser Tyr Cys Val Ile Ala Thr Tyr Gln Gly				
321	326	331	336	

gag	aaa	caa	cga	ctt	agc	aca	gca	tcc	ggg	ccc	cag	ggg	aga	gtg	ttc	1056
Glu	Lys	Gln	Arg	Leu	Ser	Thr	Ala	Ser	Gly	Pro	Gln	Gly	Arg	Val	Phe	
337					342					347					352	
ccc	cct	caa	aag	ctg	ctg	cca	ttg	gag	atg	cag	gag	agg	aag	cca	agt	1104
Pro	Pro	Gln	Lys	Leu	Leu	Pro	Leu	Glu	Met	Gln	Glu	Arg	Lys	Pro	Ser	
353					358					363					368	
ggg	ccc	agg	agg	gac	cgg	atg	att	cgg	gac	tct	atg	ctg	gat	gtg	aag	1152
Gly	Pro	Arg	Arg	Asp	Arg	Met	Ile	Arg	Asp	Ser	Met	Leu	Asp	Val	Lys	
369					374					379					384	
acc	cag	aaa	tgt	ttc	aga	att	aga	ctc	ttt	ctc	ctc	aac	gac	cca	cag	1200
Thr	Gln	Lys	Cys	Phe	Arg	Ile	Arg	Leu	Phe	Leu	Leu	Asn	Asp	Pro	Gln	
385					390					395					400	
tct	cgg	gag	aga	aga	cag	att	ctt	cat	caa	gtc	aga	gag	ctc	agg	ggc	1248
Ser	Arg	Glu	Arg	Arg	Gln	Ile	Leu	His	Gln	Val	Arg	Glu	Leu	Arg	Gly	
401					406					411					416	
cct	gaa	gga	gcc	ctg	gag	gtc	cag	gtc	cct	gaa	gac	cca	gtg	gtg	gca	1296
Pro	Glu	Gly	Ala	Leu	Glu	Val	Gln	Val	Pro	Glu	Asp	Pro	Val	Val	Ala	
417					422					427					432	
ctg	gtg	ggc	acc	gat	gcc	acc	ctg	tgc	tgc	tcc	ttc	tcc	cct	gag	cct	1344
Leu	Val	Gly	Thr	Asp	Ala	Thr	Leu	Cys	Cys	Ser	Phe	Ser	Pro	Glu	Pro	
433					438					443					448	
ggc	ttc	agc	ctg	gca	cag	ctc	aac	ctc	atc	tgg	cag	ctg	aca	gat	acc	1392
Gly	Phe	Ser	Leu	Ala	Gln	Leu	Asn	Leu	Ile	Trp	Gln	Leu	Thr	Asp	Thr	
449					454					459					464	
aaa	cag	ctg	gtg	cac	agc	ttt	gct	gag	ggc	cag	gac	cag	ggc	agc	gcc	1440
Lys	Gln	Leu	Val	His	Ser	Phe	Ala	Glu	Gly	Gln	Asp	Gln	Gly	Ser	Ala	
465					470					475					480	
tat	gcc	aac	cgc	acg	gcc	ctc	ttc	ccg	gac	ctg	ctg	gca	cag	ggc	aac	1488
Tyr	Ala	Asn	Arg	Thr	Ala	Leu	Phe	Pro	Asp	Leu	Leu	Ala	Gln	Gly	Asn	
481					486					491					496	
gca	tcc	ctg	agg	ctg	cag	cgc	gtg	cgt	gtg	gcg	gac	gag	ggc	agc	ttc	1536
Ala	Ser	Leu	Arg	Leu	Gln	Arg	Val	Arg	Val	Ala	Asp	Glu	Gly	Ser	Phe	
497					502					507					512	
acc	tgc	ttc	gtg	agc	atc	cgg	gat	ttc	ggc	agc	gct	gcc	gtc	agc	ctg	1584
Thr	Cys	Phe	Val	Ser	Ile	Arg	Asp	Phe	Gly	Ser	Ala	Ala	Val	Ser	Leu	
513					518					523					528	
cag	gtg	gcc	gct	ccc	tac	tcg	aag	ccc	agc	atg	acc	ctg	gag	ccc	aac	1632
Gln	Val	Ala	Ala	Pro	Tyr	Ser	Lys	Pro	Ser	Met	Thr	Leu	Glu	Pro	Asn	
529					534					539					544	
aag	gac	ctg	cgg	cca	ggg	gac	acg	gtg	acc	atc	acg	tgc	tcc	agc	tac	1680
Lys	Asp	Leu	Arg	Pro	Gly	Asp	Thr	Val	Thr	Ile	Thr	Cys	Ser	Ser	Tyr	
545					550					555					560	

cag ggc tac cct gag gct gag gtg ttc tgg cag gat ggg cag ggt gtg	1728
Gln Gly Tyr Pro Glu Ala Glu Val Phe Trp Gln Asp Gly Gln Gly Val	
561 566 571 576	
ccc ctg act ggc aac gtg acc acg tcg cag atg gcc aac gag cag ggc	1776
Pro Leu Thr Gly Asn Val Thr Thr Ser Gln Met Ala Asn Glu Gln Gly	
577 582 587 592	
ttg ttt gat gtg cac agc atc ctg cgg gtg gtg ctg ggt gca aat ggc	1824
Leu Phe Asp Val His Ser Ile Leu Arg Val Val Leu Gly Ala Asn Gly	
593 598 603 608	
acc tac agc tgc ctg gtg cgc aac ccc gtg ctg cag cag gat gcg cac	1872
Thr Tyr Ser Cys Leu Val Arg Asn Pro Val Leu Gln Gln Asp Ala His	
609 614 619 624	
agc tct gtc acc atc aca ccc cag aga agc ccc aca gga gcc gtg gag	1920
Ser Ser Val Thr Ile Thr Pro Gln Arg Ser Pro Thr Gly Ala Val Glu	
625 630 635 640	
gtc cag gtc cct gag gac ccg gtg gtg gcc cta gtg ggc acc gat gcc	1968
Val Gln Val Pro Glu Asp Pro Val Val Ala Leu Val Gly Thr Asp Ala	
641 646 651 656	
acc ctg cgc tgc tcc ttc tcc ccc gag cct ggc ttc agc ctg gca cag	2016
Thr Leu Arg Cys Ser Phe Ser Pro Glu Pro Gly Phe Ser Leu Ala Gln	
657 662 667 672	
ctc aac ctc atc tgg cag ctg aca gac acc aaa cag ctg gtg cac agt	2064
Leu Asn Leu Ile Trp Gln Leu Thr Asp Thr Lys Gln Leu Val His Ser	
673 678 683 688	
ttc acc gaa ggc cgg gac cag ggc agc gcc tat gcc aac cgc acg gcc	2112
Phe Thr Glu Gly Arg Asp Gln Gly Ser Ala Tyr Ala Asn Arg Thr Ala	
689 694 699 704	
ctc ttc ccg gac ctg ctg gca caa ggc aat gca tcc ctg agg ctg cag	2160
Leu Phe Pro Asp Leu Leu Ala Gln Gly Asn Ala Ser Leu Arg Leu Gln	
705 710 715 720	
cgc gtg cgt gtg gcg gac gag ggc agc ttc acc tgc ttc gtg agc atc	2208
Arg Val Arg Val Ala Asp Glu Gly Ser Phe Thr Cys Phe Val Ser Ile	
721 726 731 736	
cgg gat ttc ggc agc gct gcc gtc agc ctg cag gtg gcc gct ccc tac	2256
Arg Asp Phe Gly Ser Ala Ala Val Ser Leu Gln Val Ala Ala Pro Tyr	
737 742 747 752	
tcg aag ccc agc atg acc ctg gag ccc aac aag gac ctg cgg cca ggg	2304
Ser Lys Pro Ser Met Thr Leu Glu Pro Asn Lys Asp Leu Arg Pro Gly	
753 758 763 768	
gac acg gtg acc atc acg tgc tcc agc tac cgg ggc tac cct gag gct	2352
Asp Thr Val Thr Ile Thr Cys Ser Ser Tyr Arg Gly Tyr Pro Glu Ala	
769 774 779 784	
gag gtg ttc tgg cag gat ggg cag ggt gtg ccc ctg act ggc aac gtg	2400

Glu Val Phe Trp Gln Asp Gly Gln Gly Val Pro Leu Thr Gly Asn Val	
785 790 795 800	
acc acg tcg cag atg gcc aac gag cag ggc ttg ttt gat gtg cac agc	2448
Thr Thr Ser Gln Met Ala Asn Glu Gln Gly Leu Phe Asp Val His Ser	
801 806 811 816	
gtc ctg cgg gtg gtg ctg ggt gcg aat ggc acc tac agc tgc ctg gtg	2496
Val Leu Arg Val Val Leu Gly Ala Asn Gly Thr Tyr Ser Cys Leu Val	
817 822 827 832	
cgc aac ccc gtg ctg cag cag gat gcg cac ggc tct gtc acc atc aca	2544
Arg Asn Pro Val Leu Gln Gln Asp Ala His Gly Ser Val Thr Ile Thr	
833 838 843 848	
ggg cag cct atg aca ttc ccc cca gag gcc ctg tgg gtg acc gtg ggg	2592
Gly Gln Pro Met Thr Phe Pro Pro Glu Ala Leu Trp Val Thr Val Gly	
849 854 859 864	
ctg tct gtc tgt ctc att gca ctg ctg gtg gcc ctg gct ttc gtg tgc	2640
Leu Ser Val Cys Leu Ile Ala Leu Leu Val Ala Leu Ala Phe Val Cys	
865 870 875 880	
tgg aga aag atc aaa cag agc tgt gag gag gag aat gca gga gct gag	2688
Trp Arg Lys Ile Lys Gln Ser Cys Glu Glu Glu Asn Ala Gly Ala Glu	
881 886 891 896	
gac cag gat ggg gag gga gaa ggc tcc aag aca gat ggc aag cta tgc	2736
Asp Gln Asp Gly Glu Gly Glu Gly Ser Lys Thr Asp Gly Lys Leu Cys	
897 902 907 912	
agt aga aat ttc gtg act gtg gag tct tat tct cac tgg gct ctg acc	2784
Ser Arg Asn Phe Val Thr Val Glu Ser Tyr Ser His Trp Ala Leu Thr	
913 918 923 928	
ctg att cct gag gct tcc aag ggt tct ctg gag ctg gat gag caa gat	2832
Leu Ile Pro Glu Ala Ser Lys Gly Ser Leu Glu Leu Asp Glu Gln Asp	
929 934 939 944	
gtc tgc agt gaa ggg aca gag gaa ttg agg cca agc tac tgg gga ggg	2880
Val Cys Ser Glu Gly Thr Glu Glu Leu Arg Pro Ser Tyr Trp Gly Gly	
945 950 955 960	
gtg gaa atg cca ttc tgg agg atc tgt gac gtt gac aga gac ttt atc	2928
Val Glu Met Pro Phe Trp Arg Ile Cys Asp Val Asp Arg Asp Phe Ile	
961 966 971 976	
gac aca aca agc cag cta acc cct aac gaa cgt gtt gat tca ttc att	2976
Asp Thr Thr Ser Gln Leu Thr Pro Asn Glu Arg Val Asp Ser Phe Ile	
977 982 987 992	
cat tcc atc agt tac tcc aac atg tgg gac tgc atg gtt gtg aaa aca	3024
His Ser Ile Ser Tyr Ser Asn Met Trp Asp Cys Met Val Val Lys Thr	
993 998 1003 1008	
gaa tat gac ctt gta aaa gga gaa gcc ttg ggc cct tga	3063
Glu Tyr Asp Leu Val Lys Gly Glu Ala Leu Gly Pro *	

1009

1014

1019

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 <213> Homo sapiens

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cggatccact agtccagtgt ggtggaattc cggag atg gag gat ttg ctc gac 113
 Met Glu Asp Leu Leu Asp
 1

ttg gac gag gag ctt cgc tac agc ttg gct acc tcc agg gcc aag atg 161
 Leu Asp Glu Glu Leu Arg Tyr Ser Leu Ala Thr Ser Arg Ala Lys Met
 7 12 17 22

ggt cgc cga gct caa cag gag tca gcg cag gcc gag aat cac ctc aat 209
 Gly Arg Arg Ala Gln Gln Glu Ser Ala Gln Ala Glu Asn His Leu Asn
 23 28 33 38

ggc aag aat tcc tct ttg act ctg act gga gag act tcc tct gct aaa 257
 Gly Lys Asn Ser Ser Leu Thr Leu Thr Gly Glu Thr Ser Ser Ala Lys
 39 44 49 54

tta cct cgc tgc cga cag gga ggc tgg gca ggt gat tcc gtg aag gct 305
 Leu Pro Arg Cys Arg Gln Gly Gly Trp Ala Gly Asp Ser Val Lys Ala
 55 60 65 70

tcg aag ttt agg agg aag gct tct gaa gaa ata gaa gat ttc cgc ctc 353
 Ser Lys Phe Arg Arg Lys Ala Ser Glu Glu Ile Glu Asp Phe Arg Leu
 71 76 81 86

aga cca cag agc ctg aat gga tca gat tat gga gga gat att cct atc 401
 Arg Pro Gln Ser Leu Asn Gly Ser Asp Tyr Gly Gly Asp Ile Pro Ile
 87 92 97 102

att ccg gat ctg gag gaa gta cag gaa gaa gac ttt gtt ttg cag gtg 449
 Ile Pro Asp Leu Glu Glu Val Gln Glu Glu Asp Phe Val Leu Gln Val
 103 108 113 118

gca gcc cct ccc agc atc cag ata aag cgg gtg atg acc tac cgt gac 497
 Ala Ala Pro Pro Ser Ile Gln Ile Lys Arg Val Met Thr Tyr Arg Asp
 119 124 129 134

ctg gac aat gac ctc atg aag tac tca gcc att cag aca ctg gat ggg 545
 Leu Asp Asn Asp Leu Met Lys Tyr Ser Ala Ile Gln Thr Leu Asp Gly
 135 140 145 150

gag atc gac ctg aaa ctc ctc acc aaa gtg ctc gcg ccg gag cac gaa 593
 Glu Ile Asp Leu Lys Leu Leu Thr Lys Val Leu Ala Pro Glu His Glu
 151 156 161 166

gtc cgg gag cga aac cct tct tgg cag gat gat gtc ggc tgg gac tgg 641
 Val Arg Glu Arg Asn Pro Ser Trp Gln Asp Asp Val Gly Trp Asp Trp
 167 172 177 182

gac cat ctg ttc act gag gtg tcc tca gag gtc ctc act gag tgg gac 689
 Asp His Leu Phe Thr Glu Val Ser Ser Glu Val Leu Thr Glu Trp Asp
 183 188 193 198

cca ctg cag acg gag aag gag gac cct gcg ggg cag gcc agg cac acc 737
 Pro Leu Gln Thr Glu Lys Glu Asp Pro Ala Gly Gln Ala Arg His Thr
 199 204 209 214

tga gccc gtcacccatg ctctagacat gaagaaatgc aatgagctta aagctaaaga 794
 *

agcttgtaag cagctccgaa tttttacctg gaatatatttg taataaaaaat atttatattc 854

agtcaaccac attggataat tcaattgcaa taaattgctt attctgtgcc atctccaaaa 914

aaaaaaaa 922

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 <222> (248) .. (1174)

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agcttgaggt ctggcgctcc gcgtcctgcg gtgccctggg gtctcccgag gaccttgtag 180

ccgcgcgggtt tccttggggt ggctttggac gacgctttcg ccttctgct gcctaggatc 240

cgccgac atg aat ccc atc gta gtg gtc cac ggc ggc gga gcc ggt ccc 289
 Met Asn Pro Ile Val Val Val His Gly Gly Gly Ala Gly Pro
 1 5 10

atc tcc aag gat cgg aag gag cga gtg cac cag ggc atg gtc aga gcc 337
 Ile Ser Lys Asp Arg Lys Glu Arg Val His Gln Gly Met Val Arg Ala
 15 20 25 30

gcc acc gtg ggc tac ggc atc ctc cgg gag ggc ggg agc gcc gtg gat 385

Ala 31	Thr	Val	Gly	Tyr	Gly 36	Ile	Leu	Arg	Glu	Gly 41	Gly	Ser	Ala	Val	Asp 46	
gcc Ala 47	gta Val	gag Glu	gga Gly	gct Ala	gtc Val 52	gtc Val	gcc Ala	ctg Leu	gaa Glu	gac Asp 57	gat Asp	ccc Pro	gag Glu	ttc Phe	aac Asn 62	433
gca Ala 63	ggg Gly	tgt Cys	ggg Gly	tct Ser	gtc Val 68	ttg Leu	aac Asn	aca Thr	aat Asn	ggg Gly 73	gag Glu	ggt Val	gaa Glu	atg Met	gat Asp 78	481
gct Ala 79	agt Ser	atc Ile	atg Met	gat Asp	gga Gly 84	aaa Lys	gac Asp	ctg Leu	tct Ser	gca Ala 89	gga Gly 94	gca Ala	gtg Val	tcc Ser	gca Ala 94	529
gtc Val 95	cag Gln	tgt Cys	ata Ile	gca Ala	aat Asn 100	ccc Pro	att Ile	aaa Lys	ctt Leu	gct Ala 105	cgg Arg	ctt Leu	gtc Val	atg Met	gaa Glu 110	577
aag Lys 111	aca Thr	cct Pro	cat His	tgc Cys	ttt Phe 116	ctg Leu	act Thr	gac Asp	caa Gln	ggc Gly 121	gca Ala	gcg Ala	cag Gln	ttt Phe	gca Ala 126	625
gca Ala 127	gct Ala	atg Met	ggg Gly	gtt Val	cca Pro 132	gag Glu	att Ile	cct Pro	gga Gly	gaa Glu 137	aaa Lys	ctg Leu	gtg Val	aca Thr	gag Glu 142	673
aga Arg 143	aac Asn	aaa Lys	aag Lys	cg Arg	ctg Leu 148	gaa Glu	aaa Lys	gag Glu	aag Lys	cat His 153	gaa Glu	aaa Lys	ggg Gly	gct Ala	cag Gln 158	721
aaa Lys 159	aca Thr	gat Asp	tgt Cys	caa Gln	aaa Lys 164	aac Asn	ttg Leu	gga Gly	acc Thr	gtg Val 169	ggg Gly	gct Ala	gtt Val	gcc Ala	ttg Leu 174	769
gac Asp 175	tgc Cys	aaa Lys	ggg Gly	aat Asn	gta Val 180	gcc Ala	tac Tyr	gca Ala	acc Thr	tcc Ser 185	aca Thr	ggc Gly	ggg Gly	atc Ile	gtt Val 190	817
aat Asn 191	aaa Lys	atg Met	gtc Val	ggc Gly	cg Arg 196	gtt Val	ggg Gly	gac Asp	tca Ser	ccg Pro 201	tgt Cys	cta Leu	gga Gly	gct Ala	gga Gly 206	865
ggg Gly 207	tat Tyr	gcc Ala	gac Asp	aat Asn	gac Asp 212	atc Ile	gga Gly	gcc Ala	gtc Val	tca Ser 217	acc Thr	aca Thr	ggg Gly	cat His	ggg Gly 222	913
gaa Glu 223	agc Ser	atc Ile	ctg Leu	aag Lys	gtg Val 228	aac Asn	ctg Leu	gct Ala	aga Arg	ctc Leu 233	acc Thr	ctg Leu	ttc Phe	cac His	ata Ile 238	961
gaa Glu 239	caa Gln	gga Gly	aag Lys	acg Thr	gta Val 244	gaa Glu	gag Glu	gct Ala	gcg Ala	gac Asp 249	cta Leu	tcg Ser	ttg Leu	ggg Gly	tat Tyr 254	1009
atg Met	aag Lys	tca Ser	agg Arg	gtt Val	aaa Lys	ggg Gly	tta Leu	ggg Gly	ggc Gly	ctc Leu	atc Ile	gtg Val	gtt Val	agc Ser	aaa Lys	1057

255	260	265	270	
aca gga gac tgg gtg gca aag tgg acc tcc acc tcc atg ccc tgg gca				1105
Thr Gly Asp Trp Val Ala Lys Trp Thr Ser Thr Ser Met Pro Trp Ala				
271	276	281	286	
gcc gcc aag gac ggc aag ctg cac ttc gga att gat cct gac gat act				1153
Ala Ala Lys Asp Gly Lys Leu His Phe Gly Ile Asp Pro Asp Asp Thr				
287	292	297	302	
act atc acc gac ctt ccc taa gc cgctggaaga ttgtattcca gatgctagct				1206
Thr Ile Thr Asp Leu Pro *				
303	308			
tagagggtcaa gtacagtctc ctcattgagac atagcctaata caattagatc tagaattgga				1266
aaaattgtcc cgtctgtcac ttgttttgtt gccttaataa gcatctgaat gtttggttgt				1326
ggggcggggtt ctgaagcgat gagagaaatg cccgtattag gaggattact tgagccctgg				1386
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aggccctgta tcaaaaaaaaa aaaa				1470

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cgtcgccac tgcccgcag caggctctgg tctccgctct ccaacagctg aaaggccggc	180
gcagtgaaca cagaaacgaa aaccaagaa atg cct tat tcc aca aac aaa gag	233
Met Pro Tyr Ser Thr Asn Lys Glu	
1 5	
ttg ata ctt ggc atc atg gtg ggc act gct gga atc agc ttg ctg ctc	281
Leu Ile Leu Gly Ile Met Val Gly Thr Ala Gly Ile Ser Leu Leu Leu	
9 14 19 24	
ttg tgg tac cac aag gtc cgt aaa cca ggg ata gca atg aag tta cct	329
Leu Trp Tyr His Lys Val Arg Lys Pro Gly Ile Ala Met Lys Leu Pro	
25 30 35 40	
gaa ttt ctt tct ctg ggt aat aca ttt aat tca ata act ttg caa gat	377
Glu Phe Leu Ser Leu Gly Asn Thr Phe Asn Ser Ile Thr Leu Gln Asp	

aaa atc aac tat ggg cac ctc ttc aag gaa cat cta gat ata gca atc	1097
Lys Ile Asn Tyr Gly His Leu Phe Lys Glu His Leu Asp Ile Ala Ile	
281 286 291 296	
aaa ctt tta cca gag gaa ccc ttt cta tat tac ctc aaa ggg aga tac	1145
Lys Leu Leu Pro Glu Glu Pro Phe Leu Tyr Tyr Leu Lys Gly Arg Tyr	
297 302 307 312	
tgc tat act gtc tca aaa ctg agc tgg att gag aaa aaa atg gct gct	1193
Cys Tyr Thr Val Ser Lys Leu Ser Trp Ile Glu Lys Lys Met Ala Ala	
313 318 323 328	
act tct gtt tgg aaa aat acc atc ttc aac tgt aca aga agc ttt aca	1241
Thr Ser Val Trp Lys Asn Thr Ile Phe Asn Cys Thr Arg Ser Phe Thr	
329 334 339 344	
caa ttt cct taa ggc tgaagaacta tgccctgggtt attctaatacc caattacatg	1296
Gln Phe Pro *	
345	
tacttagcaa agtggttatac tgatcttgag gaaaaccaga atgctttgaa gttctgtaat	1356
ttggctttat tgcttcctac tgttaccaa gaggataaag aggcacagaa agagatgcaa	1416
aaaataatga cttccttgaa gaggtaaata aacgaattta ctcttcaaca aatcagatgt	1476
ggctctaccaa aatttaaagt aatcaaagtt gtgcttttat tatccttcat ttttgatgta	1536
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agcactacaa aattaattat gttattttgga gaatctatat actataatgt caatacataa	1656
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Val Arg Gly His Ala Glu Asp Tyr Glu Arg Trp Gln Arg Gln Gly Ala	
4 9 14 19	
cgc ggc tgg gac tac gcg cac tgc ctg ccc tac ttc cgc aag gcg cag	150
Arg Gly Trp Asp Tyr Ala His Cys Leu Pro Tyr Phe Arg Lys Ala Gln	
20 25 30 35	
ggc cac gag ctg ggc gcc agc cgg tac cgg ggc gcc gat ggc ccg ctg	198
Gly His Glu Leu Gly Ala Ser Arg Tyr Arg Gly Ala Asp Gly Pro Leu	
36 41 46 51	
cgg gtg tcc cgg ggc aag acc aac cac ccg ctg cac tgc gca ttc ctg	246
Arg Val Ser Arg Gly Lys Thr Asn His Pro Leu His Cys Ala Phe Leu	
52 57 62 67	
gag gcc acg cag cag gcc ggc tac ccg ctc acc gag gac atg aat ggc	294
Glu Ala Thr Gln Gln Ala Gly Tyr Pro Leu Thr Glu Asp Met Asn Gly	
68 73 78 83	
ttc cag cag gag ggc ttc ggc tgg atg gac atg acc atc cat gaa ggc	342
Phe Gln Gln Glu Gly Phe Gly Trp Met Asp Met Thr Ile His Glu Gly	
84 89 94 99	
aaa cgg tgg agc gcg gcc tgt gcc tac ctg cac cca gca ctg agc cgc	390
Lys Arg Trp Ser Ala Cys Ala Tyr Leu His Pro Ala Leu Ser Arg	
100 105 110 115	
acc aac ctc aag gcc gag gcc gag acg ctt gtg agc agg gtg cta ttt	438
Thr Asn Leu Lys Ala Glu Ala Glu Thr Leu Val Ser Arg Val Leu Phe	
116 121 126 131	
gag ggc acc cgt gca gtg ggc gtg gag tat gtc aag aat ggc cag agc	486
Glu Gly Thr Arg Ala Val Gly Val Glu Tyr Val Lys Asn Gly Gln Ser	
132 137 142 147	
cac agg gct tat gcc agc aag gag gtg att ctg agt gga ggt gcc atc	534
His Arg Ala Tyr Ala Ser Lys Glu Val Ile Leu Ser Gly Gly Ala Ile	
148 153 158 163	
aac tct cca cag ctg ctc atg ctc tct ggc atc ggg aat gct gat gac	582
Asn Ser Pro Gln Leu Leu Met Leu Ser Gly Ile Gly Asn Ala Asp Asp	
164 169 174 179	
ctc aag aaa ctg ggc atc cct gtg gtg tgc cac cta cct ggg gtt ggc	630
Leu Lys Lys Leu Gly Ile Pro Val Val Cys His Leu Pro Gly Val Gly	
180 185 190 195	
cag aac ctg caa gac cac ctg gag atc tac att cag cag gca tgc acc	678
Gln Asn Leu Gln Asp His Leu Glu Ile Tyr Ile Gln Gln Ala Cys Thr	
196 201 206 211	
cgc cct atc acc ctc cat tca gca cag aag ccc ctg cgg aag gtc tgc	726
Arg Pro Ile Thr Leu His Ser Ala Gln Lys Pro Leu Arg Lys Val Cys	
212 217 222 227	

att ggt ctg gag tgg ctc tgg aaa ttc aca ggg gag gga gcc act gcc	774
Ile Gly Leu Glu Trp Leu Trp Lys Phe Thr Gly Glu Gly Ala Thr Ala	
228 233 238 243	
cat ctg gaa aca ggt ggg ttc atc cgc agc cag cct ggg gtc ccc cac	822
His Leu Glu Thr Gly Gly Phe Ile Arg Ser Gln Pro Gly Val Pro His	
244 249 254 259	
ccg gac atc cag ttc cat ttc ctg cca tcc caa gtg att gac cac ggg	870
Pro Asp Ile Gln Phe His Phe Leu Pro Ser Gln Val Ile Asp His Gly	
260 265 270 275	
cgg gtc ccc acc cag cag gag gct tac cag gta cat gtg ggg ccc atg	918
Arg Val Pro Thr Gln Gln Glu Ala Tyr Gln Val His Val Gly Pro Met	
276 281 286 291	
cgg ggc acg agt gtg ggc tgg ctc aaa ctg aga agt gcc aat ccc caa	966
Arg Gly Thr Ser Val Gly Trp Leu Lys Leu Arg Ser Ala Asn Pro Gln	
292 297 302 307	
gac cac cct gtg atc cag ccc aac tac ttg tca aca gaa act gat att	1014
Asp His Pro Val Ile Gln Pro Asn Tyr Leu Ser Thr Glu Thr Asp Ile	
308 313 318 323	
gag gat ttc cgt ctg tgt gtg aag ctc acc aga gaa att ttt gca cag	1062
Glu Asp Phe Arg Leu Cys Val Lys Leu Thr Arg Glu Ile Phe Ala Gln	
324 329 334 339	
gaa gcc ctg gct ccg ttc cga ggg aaa gag ctc cag cca gga agc cac	1110
Glu Ala Leu Ala Pro Phe Arg Gly Lys Glu Leu Gln Pro Gly Ser His	
340 345 350 355	
att cag tca gat aaa gag ata gat gcc ttt gtg cgg gca aaa gcc gac	1158
Ile Gln Ser Asp Lys Glu Ile Asp Ala Phe Val Arg Ala Lys Ala Asp	
356 361 366 371	
agc gcc tac cac ccc tcg tgc acc tgt aag atg ggc cag ccc tcc gat	1206
Ser Ala Tyr His Pro Ser Cys Thr Cys Lys Met Gly Gln Pro Ser Asp	
372 377 382 387	
ccc act gcc gtg gtg gat ccg cag aca agg gtc ctc ggg gtg gaa aac	1254
Pro Thr Ala Val Val Asp Pro Gln Thr Arg Val Leu Gly Val Glu Asn	
388 393 398 403	
ctc agg gtc gtc gat gcc tcc atc atg cct agc atg gtc agc ggc aac	1302
Leu Arg Val Val Asp Ala Ser Ile Met Pro Ser Met Val Ser Gly Asn	
404 409 414 419	
ctg aac gcc ccc aca atc atg atc gca gag aag gca gct gac att atc	1350
Leu Asn Ala Pro Thr Ile Met Ile Ala Glu Lys Ala Ala Asp Ile Ile	
420 425 430 435	
aag ggg cag cct gca ctc tgg gac aaa gat gtc cct gtc tac aag ccc	1398
Lys Gly Gln Pro Ala Leu Trp Asp Lys Asp Val Pro Val Tyr Lys Pro	
436 441 446 451	

agg acg ctg gcc acc cag cgc taa gacagttgct gctggaggat gaccagggaa	1452
Arg Thr Leu Ala Thr Gln Arg *	
452	457
gccccctgat aagccaagag ggccagcaca gcccttgctc ccaggctcct gcctgaaact	1512
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tgggaaatga gacaagtact gggcagtga tccagctcct tttccccagc ctttcctgt	1632
gggccatttg gggaaggcca gcattcagcc tgagatgttc ctccctgcct cctggagggga	1692
cagaagggga ggatggttaa ctctgccgc atcctttttc ttgtgttcac gtggcattct	1752
ctaaccaggg gcagtgggtc cttcccaggg catgcacaga ggctgggtgc ctgccagacc	1812
cacggagggt tcgcgaagga aggggcatcc tccttcttga gctgcaagct ttagctgagg	1872
cagtaagtca cacagtagtt agttcagcct gggctggcac ataagtaagt cccagtgtc	1932
cctgttgaga ggggaaagtt gcctgctggt tgaaaaactg gcttttcctt tctcgctgcc	1992
taatttcact ctcagagtga ggcaggtaac tggggctcca ctgggtcact ctgagagggt	2052
tgtggctctg gttcttatta aaccagggcc aggtgcaggg ctcacacctg taatcccagc	2112
actttgggaa ggtcacttga gctcaggagt tcaagaccag cctgggcaac atagtgagac	2172
cttgtctctg gaaaacaatt agctgggcat ggtggtacac acctgtagtc ccagctactt	2232
gggaggctga ggcgaggga tgcttttagcc caggagggtg aggtcctgt gaaccctgat	2292
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cccccgcggt cctcggtgcg tccgcacgcc cctcctcctc ggctccctcc ttcttctctc	180
cgcgctctc cgccccctcc ccgtctccgc aggccgagtg gtgcggcccc cctccagctg	240
accggcctgg aatcccggct ccgagccccg gactcgcgtc cgccccgcgc cccgctcctt	300

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ccccctcccc ccgccccgag ccccccgacg ccgcccgcac cgcctcctca gagcggggcc 360

cgggcccagc cgccgccacc gctgccgccg ccgagctccg ccgccgccga gcacc atg 418
                                     Met
                                     1

gga gac gct ggg agc gag cgc agc aaa gcg ccc agc ctg ccg cct cgc 466
Gly Asp Ala Gly Ser Glu Arg Ser Lys Ala Pro Ser Leu Pro Pro Arg
  2                               7                               12                               17

tgt ccc tgc ggc ttc tgg ggg tcc agc aag act atg aat ctc tgt tcc 514
Cys Pro Cys Gly Phe Trp Gly Ser Ser Lys Thr Met Asn Leu Cys Ser
 18                               23                               28                               33

aaa tgc ttt gct gat ttt caa aag aaa cag cca gac gat gat tcc gct 562
Lys Cys Phe Ala Asp Phe Gln Lys Lys Gln Pro Asp Asp Asp Ser Ala
 34                               39                               44                               49

cca agt aca agt aac agc caa tca gat ttg ttt tcc gaa gag acc acc 610
Pro Ser Thr Ser Asn Ser Gln Ser Asp Leu Phe Ser Glu Glu Thr Thr
 50                               55                               60                               65

agt gac aac aac aat acc tcg ata acc acg cca act ctt agt ccc agc 658
Ser Asp Asn Asn Asn Thr Ser Ile Thr Thr Pro Thr Leu Ser Pro Ser
 66                               71                               76                               81

cag cag ccg ctt ccg aca gaa ctg aat gta act tca ccg agt aaa gag 706
Gln Gln Pro Leu Pro Thr Glu Leu Asn Val Thr Ser Pro Ser Lys Glu
 82                               87                               92                               97

gag tat tca cag tct gag aat gag gct tca cca gta aaa cgg cca cga 754
Glu Tyr Ser Gln Ser Glu Asn Glu Ala Ser Pro Val Lys Arg Pro Arg
 98                               103                               108                               113

cta ctt gag aat acg gaa cgg tcc gag gaa acc agt cga tct aaa cag 802
Leu Leu Glu Asn Thr Glu Arg Ser Glu Glu Thr Ser Arg Ser Lys Gln
114                               119                               124                               129

aag agt cga cgt cgg tgc ttc cag tgc caa acc aaa ctg gag ctg gtg 850
Lys Ser Arg Arg Arg Cys Phe Gln Cys Gln Thr Lys Leu Glu Leu Val
130                               135                               140                               145

cag cag gaa ttg gga tcg tgt cgc tgc ggt tat gtg ttc tgt atg tta 898
Gln Gln Glu Leu Gly Ser Cys Arg Cys Gly Tyr Val Phe Cys Met Leu
146                               151                               156                               161

cat cgc ctc ccc gag cag cac gac tgc aca ttc gac cac atg ggc cgt 946
His Arg Leu Pro Glu Gln His Asp Cys Thr Phe Asp His Met Gly Arg
162                               167                               172                               177

ggc cgg gag gaa gcc atc atg aaa atg gtg aag ctg gac cgg aaa gtg 994
Gly Arg Glu Glu Ala Ile Met Lys Met Val Lys Leu Asp Arg Lys Val
178                               183                               188                               193

ggg cgc tcc tgc cag cgc atc ggg gag ggg tgc tcc tga aggccaggca 1043
Gly Arg Ser Cys Gln Arg Ile Gly Glu Gly Cys Ser *
194                               199                               204

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tggccaccac gtgacgctgt tcttagttca ctaatgtag ccttatttag gacaaaagtca	1103
gccagacacc ttgtactggg cacgcgtcag actgcagcca gtccgtttcc tttctttagc	1163
cagccatcct ggtactgtag tttaggggtt gatgggtggtt gaaattgatt tctggctggt	1223
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 <213> Homo sapiens

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 <222> (20) .. (2887)

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gct gcc gcg gcc ccc acc gcc acc gtc tcg gag aaa gaa ccg ttt ggc	100
Ala Ala Ala Ala Pro Thr Ala Thr Val Ser Glu Lys Glu Pro Phe Gly	
12 17 22 27	
aag ctg caa ctc tcc tcc cgg gac cct ccg ggt tct ctg tcc gcc aag	148
Lys Leu Gln Leu Ser Ser Arg Asp Pro Pro Gly Ser Leu Ser Ala Lys	
28 33 38 43	
aag gtc cgg act gag gag aag aag gca ccg cgg aga gtg aac gga gaa	196
Lys Val Arg Thr Glu Glu Lys Lys Ala Pro Arg Arg Val Asn Gly Glu	
44 49 54 59	
ggg ggc agc ggc ggg aac agc agg cag ctg cag ccg ccg gca gca cct	244
Gly Gly Ser Gly Gly Asn Ser Arg Gln Leu Gln Pro Pro Ala Ala Pro	
60 65 70 75	
tcg cct cag agc tat ggc agc ccc gcg tct tgg agc ttt gcc cct ctg	292
Ser Pro Gln Ser Tyr Gly Ser Pro Ala Ser Trp Ser Phe Ala Pro Leu	
76 81 86 91	
tct gct gct ccc tcc ccg tcc tct tct ccg agc agt ttc tct ttc tcc	340
Ser Ala Ala Pro Ser Pro Ser Ser Ser Arg Ser Ser Phe Ser Phe Ser	
92 97 102 107	
gct ggc acg gcc gtt ccc tcc tca gcc tcc gct tcc ttg tct cag ccg	388
Ala Gly Thr Ala Val Pro Ser Ser Ala Ser Ala Ser Leu Ser Gln Pro	
108 113 118 123	
gtg ccg cgc aaa ctg ctg gtc cct cct acg ctg ctg cac gct cag cct	436
Val Pro Arg Lys Leu Leu Val Pro Pro Thr Leu Leu His Ala Gln Pro	
124 129 134 139	

cac cat ctc ctc ctg ccc gcc gcc gcc gcc gct gcc tcg gct aac gcc	484
His His Leu Leu Leu Pro Ala Ala Ala Ala Ala Ala Ser Ala Asn Ala	
140 145 150 155	
aag tcg cgc aga cct aag gag aag cgg gag aag gag agg agg agg cac	532
Lys Ser Arg Arg Pro Lys Glu Lys Arg Glu Lys Glu Arg Arg Arg His	
156 161 166 171	
ggt ctc ggt ggg gcc cga gag gcc ggc ggg gcc tcc cgg gag gag aac	580
Gly Leu Gly Gly Ala Arg Glu Ala Gly Gly Ala Ser Arg Glu Glu Asn	
172 177 182 187	
ggg gag gtg aag ccg ctg ccc cga gca aat gat aaa acc agg agc ttt	628
Gly Glu Val Lys Pro Leu Pro Arg Ala Asn Asp Lys Thr Arg Ser Phe	
188 193 198 203	
gac gat ttt tcg cca gat caa gcg gct gca gaa tgt ttg agc att aga	676
Asp Asp Phe Ser Pro Asp Gln Ala Ala Ala Glu Cys Leu Ser Ile Arg	
204 209 214 219	
aaa agg cga att ctt aag ggt tct tgt cag aca ggt tac ctc cga aaa	724
Lys Arg Arg Ile Leu Lys Gly Ser Cys Gln Thr Gly Tyr Leu Arg Lys	
220 225 230 235	
gcc tta ttt tca gat aca gtc aca ttg ggc att aag gct tca aca tat	772
Ala Leu Phe Ser Asp Thr Val Thr Leu Gly Ile Lys Ala Ser Thr Tyr	
236 241 246 251	
gga ttt tgg gga ggc atg att cag tcc ata gtg aag ggc ttg gca gag	820
Gly Phe Trp Gly Gly Met Ile Gln Ser Ile Val Lys Gly Leu Ala Glu	
252 257 262 267	
acc ttc aac ttc tgg ata cat att tgg gaa ctg aat gac ttg cag tat	868
Thr Phe Asn Phe Trp Ile His Ile Trp Glu Leu Asn Asp Leu Gln Tyr	
268 273 278 283	
att tca gcc ctt ttt gcc tgc tca gaa gag atg ccc gat tat cat tta	916
Ile Ser Ala Leu Phe Ala Cys Ser Glu Glu Met Pro Asp Tyr His Leu	
284 289 294 299	
gaa aaa caa ttg gct gat aaa atc aaa gac aaa att aaa gag aga gac	964
Glu Lys Gln Leu Ala Asp Lys Ile Lys Asp Lys Ile Lys Glu Arg Asp	
300 305 310 315	
aaa gaa aaa gaa aga gaa aaa aag aaa cat aaa gta atg aat gag atc	1012
Lys Glu Lys Glu Arg Glu Lys Lys Lys His Lys Val Met Asn Glu Ile	
316 321 326 331	
aag aaa gag aat gga gaa gta aag att ttg ctg aaa agt ggg aag gag	1060
Lys Lys Glu Asn Gly Glu Val Lys Ile Leu Leu Lys Ser Gly Lys Glu	
332 337 342 347	
aaa cca aaa aca aat ata gaa gac tta caa att aaa aag gta aag/aag	1108
Lys Pro Lys Thr Asn Ile Glu Asp Leu Gln Ile Lys Lys Val Lys Lys	
348 353 358 363	

aaa aag aaa aag aaa cac aaa gag aat gaa aaa cgg aag cgt ccg aaa	1156
Lys Lys Lys Lys Lys His Lys Glu Asn Glu Lys Arg Lys Arg Pro Lys	
364 369 374 379	
atg tat agc aaa tct att cag acc atc tgc tca gga ttg cta act gat	1204
Met Tyr Ser Lys Ser Ile Gln Thr Ile Cys Ser Gly Leu Leu Thr Asp	
380 385 390 395	
gtt gaa gat caa gca gcc aaa ggc atc cta aat gat aac ata aaa gat	1252
Val Glu Asp Gln Ala Ala Lys Gly Ile Leu Asn Asp Asn Ile Lys Asp	
396 401 406 411	
tac gtt ggg aag aat ttg gat acc aag aac tat gat tcc aaa att cca	1300
Tyr Val Gly Lys Asn Leu Asp Thr Lys Asn Tyr Asp Ser Lys Ile Pro	
412 417 422 427	
gag aac agt gag ttt cca ttt gtc tca tta aag gag cca cga gtt cag	1348
Glu Asn Ser Glu Phe Pro Phe Val Ser Leu Lys Glu Pro Arg Val Gln	
428 433 438 443	
aat aac ctc aaa agg ttg gac act ttg gaa ttt aaa caa ctc att cat	1396
Asn Asn Leu Lys Arg Leu Asp Thr Leu Glu Phe Lys Gln Leu Ile His	
444 449 454 459	
ata gag cac cag cct aat gga ggt gca tcg gtt atc cat gcc tac agt	1444
Ile Glu His Gln Pro Asn Gly Gly Ala Ser Val Ile His Ala Tyr Ser	
460 465 470 475	
aac gaa ctc tcc cac ctg tct cct atg gag atg gag agg ttt gca gaa	1492
Asn Glu Leu Ser His Leu Ser Pro Met Glu Met Glu Arg Phe Ala Glu	
476 481 486 491	
gag ttt gtg ggt cta gtg ttc agt gaa aat gaa aac tct gca gct ttc	1540
Glu Phe Val Gly Leu Val Phe Ser Glu Asn Glu Asn Ser Ala Ala Phe	
492 497 502 507	
tac gtg atg ggt att gtt cat ggg gca gct act tat tta cct gac ttt	1588
Tyr Val Met Gly Ile Val His Gly Ala Ala Thr Tyr Leu Pro Asp Phe	
508 513 518 523	
tta gac tat ttt tca ttt aat ttt ccc aat tca cca gtg aaa atg gag	1636
Leu Asp Tyr Phe Ser Phe Asn Phe Pro Asn Ser Pro Val Lys Met Glu	
524 529 534 539	
ata ttg gga aag aaa gat ata gag aca acg act atg tcc aat ttt cat	1684
Ile Leu Gly Lys Lys Asp Ile Glu Thr Thr Thr Met Ser Asn Phe His	
540 545 550 555	
gct cag gta aaa aga acg tat tct cat ggt act tac aga gct ggc cca	1732
Ala Gln Val Lys Arg Thr Tyr Ser His Gly Thr Tyr Arg Ala Gly Pro	
556 561 566 571	
atg aga caa ata agc ttg gtg gga gca gtt gat gaa gaa gta gga gat	1780
Met Arg Gln Ile Ser Leu Val Gly Ala Val Asp Glu Glu Val Gly Asp	
572 577 582 587	
tat ttc cct gag ttc ctt gac atg ttg gaa gag tca cca ttt tta aaa	1828

Tyr Phe Pro Glu Phe Leu Asp Met Leu Glu Glu Ser Pro Phe Leu Lys	
588 593 598 603	
tgt aca ctg cca tgg ggg acg cta tct agt cta aaa tta cag agt cga	1876
Cys Thr Leu Pro Trp Gly Thr Leu Ser Ser Leu Lys Leu Gln Ser Arg	
604 609 614 619	
aaa gat agt gat gat ggt ccc atc atg tgg gtt cgt cca gga gaa caa	1924
Lys Asp Ser Asp Asp Gly Pro Ile Met Trp Val Arg Pro Gly Glu Gln	
620 625 630 635	
atg atc cct gtg gct gat atg cca aag tca cct ttc aaa agg aaa aga	1972
Met Ile Pro Val Ala Asp Met Pro Lys Ser Pro Phe Lys Arg Lys Arg	
636 641 646 651	
act acc aat gaa ata aaa aat ctt cag tac cta cct cga aca agt gag	2020
Thr Thr Asn Glu Ile Lys Asn Leu Gln Tyr Leu Pro Arg Thr Ser Glu	
652 657 662 667	
ccc cgt gag atg ctc ttt gaa gac agg aca aga gct cat gca gat cat	2068
Pro Arg Glu Met Leu Phe Glu Asp Arg Thr Arg Ala His Ala Asp His	
668 673 678 683	
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Ile Gly Gln Gly Phe Glu Arg Gln Thr Thr Ala Ala Val Gly Val Leu	
684 689 694 699	
aag gct gtg cac tgt gga gag tgg cct gat caa ccc cgt ata acc aaa	2164
Lys Ala Val His Cys Gly Glu Trp Pro Asp Gln Pro Arg Ile Thr Lys	
700 705 710 715	
gat gta att tgt ttt cat gct gaa gat ttc tta gaa gta gtt caa cga	2212
Asp Val Ile Cys Phe His Ala Glu Asp Phe Leu Glu Val Val Gln Arg	
716 721 726 731	
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Met Gln Leu Asp Leu His Glu Pro Pro Leu Ser Gln Cys Val Gln Trp	
732 737 742 747	
gtt gat gat gca aaa ctg aat caa ctg agg agg gaa ggc att cgc tat	2308
Val Asp Asp Ala Lys Leu Asn Gln Leu Arg Arg Glu Gly Ile Arg Tyr	
748 753 758 763	
gcc agg att cag cta tat gat aat gac att tat ttt att cca agg aat	2356
Ala Arg Ile Gln Leu Tyr Asp Asn Asp Ile Tyr Phe Ile Pro Arg Asn	
764 769 774 779	
gtt gtt cat cag ttc aag aca gtt tca gct gta tgc agt tta gca tgg	2404
Val Val His Gln Phe Lys Thr Val Ser Ala Val Cys Ser Leu Ala Trp	
780 785 790 795	
cat att cgg ctc aaa tta tat cac tca gag gag gac act tct cag aat	2452
His Ile Arg Leu Lys Leu Tyr His Ser Glu Glu Asp Thr Ser Gln Asn	
796 801 806 811	
aca gct act cat gaa aca ggc aca tca tca gat tcc aca tca tct gtt	2500
Thr Ala Thr His Glu Thr Gly Thr Ser Ser Asp Ser Thr Ser Ser Val	

812	817	822	827	
ctt gga cct cac act gac aac atg att tgt gct gta agc aaa gcc tcc				2548
Leu Gly Pro His Thr Asp Asn Met Ile Cys Ala Val Ser Lys Ala Ser				
828	833	838	843	
ttg gat tct gtt ttt tca gat aaa ctt cat tct aaa tat gaa tta cag				2596
Leu Asp Ser Val Phe Ser Asp Lys Leu His Ser Lys Tyr Glu Leu Gln				
844	849	854	859	
cag att aaa cat gaa cct att gca tct gta aga atc aag gaa gaa cct				2644
Gln Ile Lys His Glu Pro Ile Ala Ser Val Arg Ile Lys Glu Glu Pro				
860	865	870	875	
gtg aat gtt aat att cct gaa aag act aca gca ctg aat aat atg gat				2692
Val Asn Val Asn Ile Pro Glu Lys Thr Thr Ala Leu Asn Asn Met Asp				
876	881	886	891	
ggc aag aat gtt aaa gca aaa ttg gat cat gtt caa ttt gca gaa ttt				2740
Gly Lys Asn Val Lys Ala Lys Leu Asp His Val Gln Phe Ala Glu Phe				
892	897	902	907	
aag att gac atg gat tct aaa ttt gaa aat agc aac aaa gat tta aag				2788
Lys Ile Asp Met Asp Ser Lys Phe Glu Asn Ser Asn Lys Asp Leu Lys				
908	913	918	923	
gaa gaa ttg tgc cct gga aat cta agt cta gtt gat aca agg caa cac				2836
Glu Glu Leu Cys Pro Gly Asn Leu Ser Leu Val Asp Thr Arg Gln His				
924	929	934	939	
agt tca gca cat tca aat caa gat aaa aaa gac gat gac att ttg tgc				2884
Ser Ser Ala His Ser Asn Gln Asp Lys Lys Asp Asp Asp Ile Leu Cys				
940	945	950	955	
taa				2887
*				
956				

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1 5	
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Ala	Ala	Ala	Ala	Pro	Thr	Ala	Thr	Val	Ser	Glu	Lys	Glu	Pro	Phe	Gly	
12					17					22					27	
aag	ctg	caa	ctc	tcc	tcc	cgg	gac	cct	ccg	ggt	tct	ctg	tcc	gcc	aag	148
Lys	Leu	Gln	Leu	Ser	Ser	Arg	Asp	Pro	Pro	Gly	Ser	Leu	Ser	Ala	Lys	
28					33					38					43	
aag	gtc	cgg	act	gag	gag	aag	aag	gca	ccg	cgg	aga	gtg	aac	gga	gaa	196
Lys	Val	Arg	Thr	Glu	Glu	Lys	Lys	Ala	Pro	Arg	Arg	Val	Asn	Gly	Glu	
44					49					54					59	
ggg	ggc	agc	ggc	ggg	aac	agc	agg	cag	ctg	cag	ccg	ccg	gca	gca	cct	244
Gly	Gly	Ser	Gly	Gly	Asn	Ser	Arg	Gln	Leu	Gln	Pro	Pro	Ala	Ala	Pro	
60					65					70					75	
tcg	cct	cag	agc	tat	ggc	agc	ccc	gcg	tct	tgg	agc	ttt	gcc	cct	ctg	292
Ser	Pro	Gln	Ser	Tyr	Gly	Ser	Pro	Ala	Ser	Trp	Ser	Phe	Ala	Pro	Leu	
76					81					86					91	
tct	gct	gct	ccc	tcc	ccg	tcc	tct	tct	cgg	agc	agt	ttc	tct	ttc	tcc	340
Ser	Ala	Ala	Pro	Ser	Pro	Ser	Ser	Ser	Arg	Ser	Ser	Phe	Ser	Phe	Ser	
92					97					102					107	
gct	ggc	acg	gcc	gtt	ccc	tcc	tca	gcc	tcc	gct	tcc	ttg	tct	cag	ccg	388
Ala	Gly	Thr	Ala	Val	Pro	Ser	Ser	Ala	Ser	Ala	Ser	Leu	Ser	Gln	Pro	
108					113					118					123	
gtg	ccg	cgc	aaa	ctg	ctg	gtc	cct	cct	acg	ctg	ctg	cac	gct	cag	cct	436
Val	Pro	Arg	Lys	Leu	Leu	Val	Pro	Pro	Thr	Leu	Leu	His	Ala	Gln	Pro	
124					129					134					139	
cac	cat	ctc	ctc	ctg	ccc	gcc	gcc	gcc	gcc	gct	gcc	tcg	gct	aac	gcc	484
His	His	Leu	Leu	Leu	Pro	Ala	Ala	Ala	Ala	Ala	Ala	Ser	Ala	Asn	Ala	
140					145					150					155	
aag	tcg	cgc	aga	cct	aag	gag	aag	cgg	gag	aag	gag	agg	agg	agg	cac	532
Lys	Ser	Arg	Arg	Pro	Lys	Glu	Lys	Arg	Glu	Lys	Glu	Arg	Arg	Arg	His	
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ggt	ctc	ggt	ggg	gcc	cga	gag	gcc	ggc	ggg	gcc	tcc	cgg	gag	gag	aac	580
Gly	Leu	Gly	Gly	Ala	Arg	Glu	Ala	Gly	Gly	Ala	Ser	Arg	Glu	Glu	Asn	
172					177					182					187	
ggg	gag	gtg	aag	ccg	ctg	ccc	cga	gat	aaa	atc	aaa	gac	aaa	att	aaa	628
Gly	Glu	Val	Lys	Pro	Leu	Pro	Arg	Asp	Lys	Ile	Lys	Asp	Lys	Ile	Lys	
188					193					198					203	
gag	aga	gac	aaa	gaa	aaa	gaa	aga	gaa	aaa	aag	aaa	cat	aaa	gta	atg	676
Glu	Arg	Asp	Lys	Glu	Lys	Glu	Arg	Glu	Lys	Lys	Lys	His	Lys	Val	Met	
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Asn	Glu	Ile	Lys	Lys	Glu	Asn	Gly	Glu	Val	Lys	Ile	Leu	Leu	Lys	Ser	
220					225					230					235	
ggg	aag	gag	aaa	cca	aaa	aca	aat	ata	gaa	gac	tta	caa	att	aaa	aag	772
Gly	Lys	Glu	Lys	Pro	Lys	Thr	Asn	Ile	Glu	Asp	Leu	Gln	Ile	Lys	Lys	

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gta aag aag aaa aag aaa aag aaa cac aaa gag aat gaa aaa cgg aag				820
Val Lys Lys Lys Lys Lys Lys Lys His Lys Glu Asn Glu Lys Arg Lys				
252	257	262	267	
cgt ccg aaa atg tat agc aaa tct att cag acc atc tgc tca gga ttg				868
Arg Pro Lys Met Tyr Ser Lys Ser Ile Gln Thr Ile Cys Ser Gly Leu				
268	273	278	283	
cta act gat gtt gaa gat caa gca gcc aaa ggc atc cta aat gat aac				916
Leu Thr Asp Val Glu Asp Gln Ala Ala Lys Gly Ile Leu Asn Asp Asn				
284	289	294	299	
ata aaa gat tac gtt ggg aag aat ttg gat acc aag aac tat gat tcc				964
Ile Lys Asp Tyr Val Gly Lys Asn Leu Asp Thr Lys Asn Tyr Asp Ser				
300	305	310	315	
aaa att cca gag aac agt gag ttt cca ttt gtc tca tta aag gag cca				1012
Lys Ile Pro Glu Asn Ser Glu Phe Pro Phe Val Ser Leu Lys Glu Pro				
316	321	326	331	
cga gtt cag aat aac ctc aaa agg ttg gac act ttg gaa ttt aaa caa				1060
Arg Val Gln Asn Asn Leu Lys Arg Leu Asp Thr Leu Glu Phe Lys Gln				
332	337	342	347	
ctc att cat ata gag cac cag cct aat gga ggt gca tcg gtt atc cat				1108
Leu Ile His Ile Glu His Gln Pro Asn Gly Gly Ala Ser Val Ile His				
348	353	358	363	
gcc tac agt aac gaa ctc tcc cac ctg tct cct atg gag atg gag agg				1156
Ala Tyr Ser Asn Glu Leu Ser His Leu Ser Pro Met Glu Met Glu Arg				
364	369	374	379	
ttt gca gaa gag ttt gtg ggt cta gtg ttc agt gaa aat gaa aac tct				1204
Phe Ala Glu Glu Phe Val Gly Leu Val Phe Ser Glu Asn Glu Asn Ser				
380	385	390	395	
gca gct ttc tac gtg atg ggt att gtt cat ggg gca gct act tat tta				1252
Ala Ala Phe Tyr Val Met Gly Ile Val His Gly Ala Ala Thr Tyr Leu				
396	401	406	411	
cct gac ttt tta gac tat ttt tca ttt aat ttt ccc aat tca cca gtg				1300
Pro Asp Phe Leu Asp Tyr Phe Ser Phe Asn Phe Pro Asn Ser Pro Val				
412	417	422	427	
aaa atg gag ata ttg gga aag aaa gat ata gag aca acg act atg tcc				1348
Lys Met Glu Ile Leu Gly Lys Lys Asp Ile Glu Thr Thr Thr Met Ser				
428	433	438	443	
aat ttt cat gct cag gta aaa aga acg tat tct cat ggt act tac aga				1396
Asn Phe His Ala Gln Val Lys Arg Thr Tyr Ser His Gly Thr Tyr Arg				
444	449	454	459	
gct ggc cca atg aga caa ata agc ttg gtg gga gca gtt gat gaa gaa				1444
Ala Gly Pro Met Arg Gln Ile Ser Leu Val Gly Ala Val Asp Glu Glu				
460	465	470	475	

gta gga gat tat ttc cct gag ttc ctt gac atg ttg gaa gag tca cca	1492
Val Gly Asp Tyr Phe Pro Glu Phe Leu Asp Met Leu Glu Glu Ser Pro	
476 481 486 491	
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Phe Leu Lys Cys Thr Leu Pro Trp Gly Thr Leu Ser Ser Leu Lys Leu	
492 497 502 507	
cag agt cga aaa gat agt gat gat ggt ccc atc atg tgg gtt cgt cca	1588
Gln Ser Arg Lys Asp Ser Asp Asp Gly Pro Ile Met Trp Val Arg Pro	
508 513 518 523	
gga gaa caa atg atc cct gtg gct gat atg cca aag tca cct ttc aaa	1636
Gly Glu Gln Met Ile Pro Val Ala Asp Met Pro Lys Ser Pro Phe Lys	
524 529 534 539	
agg aaa aga act acc aat gaa ata aaa aat ctt cag tac cta cct cga	1684
Arg Lys Arg Thr Thr Asn Glu Ile Lys Asn Leu Gln Tyr Leu Pro Arg	
540 545 550 555	
aca agt gag ccc cgt gag atg ctc ttt gaa gac agg aca aga gct cat	1732
Thr Ser Glu Pro Arg Glu Met Leu Phe Glu Asp Arg Thr Arg Ala His	
556 561 566 571	
gca gat cat ata gga caa ggt ttt gaa cga cag act aca gct gct gtt	1780
Ala Asp His Ile Gly Gln Gly Phe Glu Arg Gln Thr Thr Ala Ala Val	
572 577 582 587	
gga gtg ctg aag gct gtg cac tgt gga gag tgg cct gat caa ccc cgt	1828
Gly Val Leu Lys Ala Val His Cys Gly Glu Trp Pro Asp Gln Pro Arg	
588 593 598 603	
ata acc aaa gat gta att tgt ttt cat gct gaa gat ttc tta gaa gta	1876
Ile Thr Lys Asp Val Ile Cys Phe His Ala Glu Asp Phe Leu Glu Val	
604 609 614 619	
gtt caa cga atg cag tta gat tta cat gaa cct cca ctg tcc cag tgt	1924
Val Gln Arg Met Gln Leu Asp Leu His Glu Pro Pro Leu Ser Gln Cys	
620 625 630 635	
gtc caa tgg gtt gat gat gca aaa ctg aat caa ctg agg agg gaa ggc	1972
Val Gln Trp Val Asp Asp Ala Lys Leu Asn Gln Leu Arg Arg Glu Gly	
636 641 646 651	
att cgc tat gcc agg att cag cta tat gat aat gac att tat ttt att	2020
Ile Arg Tyr Ala Arg Ile Gln Leu Tyr Asp Asn Asp Ile Tyr Phe Ile	
652 657 662 667	
cca agg aat gtt gtt cat cag ttc aag aca gtt tca gct gta tgc agt	2068
Pro Arg Asn Val Val His Gln Phe Lys Thr Val Ser Ala Val Cys Ser	
668 673 678 683	
ttt gca tgg cat att cgg ctc aaa tta tat cac tca gag gag gac act	2116
Leu Ala Trp His Ile Arg Leu Lys Leu Tyr His Ser Glu Glu Asp Thr	
684 689 694 699	

tct cag aat aca gct act cat gaa aca ggc aca tca tca gat tcc aca	2164
Ser Gln Asn Thr Ala Thr His Glu Thr Gly Thr Ser Ser Asp Ser Thr	
700 705 710 715	
tca tct gtt ctt gga cct cac act gac aac atg att tgt gct gta agc	2212
Ser Ser Val Leu Gly Pro His Thr Asp Asn Met Ile Cys Ala Val Ser	
716 721 726 731	
aaa gcc tcc ttg gat tct gtt ttt tca gat aaa ctt cat tct aaa tat	2260
Lys Ala Ser Leu Asp Ser Val Phe Ser Asp Lys Leu His Ser Lys Tyr	
732 737 742 747	
gaa tta cag cag att aaa cat gaa cct att gca tct gta aga atc aag	2308
Glu Leu Gln Gln Ile Lys His Glu Pro Ile Ala Ser Val Arg Ile Lys	
748 753 758 763	
gaa gaa cct gtg aat gtt aat att cct gaa aag act aca gca ctg aat	2356
Glu Glu Pro Val Asn Val Asn Ile Pro Glu Lys Thr Thr Ala Leu Asn	
764 769 774 779	
aat atg gat ggc aag aat gtt aaa gca aaa ttg gat cat gtt caa ttt	2404
Asn Met Asp Gly Lys Asn Val Lys Ala Lys Leu Asp His Val Gln Phe	
780 785 790 795	
gca gaa ttt aag att gac atg gat tct aaa ttt gaa aat agc aac aaa	2452
Ala Glu Phe Lys Ile Asp Met Asp Ser Lys Phe Glu Asn Ser Asn Lys	
796 801 806 811	
gat tta aag gaa gaa ttg tgc cct gga aat cta agt cta gtt gat aca	2500
Asp Leu Lys Glu Glu Leu Cys Pro Gly Asn Leu Ser Leu Val Asp Thr	
812 817 822 827	
agg caa cac agt tca gca cat tca aat caa gat aaa aaa gac gat gac	2548
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cactgaaacc attaggaaaa atccttgtgg ttaacagcag aggcttcaga gtgtaacctg 180
 tactcgggcc tagaaaattat ttaaa atg gcg act gat acg tct caa ggt gaa 232
 Met Ala Thr Asp Thr Ser Gln Gly Glu
 1 5
 ctc gtc cat cct aag gca ctc cca ctt ata gta gga gct cag ctg atc 280
 Leu Val His Pro Lys Ala Leu Pro Leu Ile Val Gly Ala Gln Leu Ile
 10 15 20 25
 cac gcg gac aag tta ggt gag aag gta gaa gat agc acc atg ccg att 328
 His Ala Asp Lys Leu Gly Glu Lys Val Glu Asp Ser Thr Met Pro Ile
 26 31 36 41
 cgt cga act gtg aat tct acc cgg gaa act cct ccc aaa agc aag ctt 376
 Arg Arg Thr Val Asn Ser Thr Arg Glu Thr Pro Pro Lys Ser Lys Leu
 42 47 52 57
 gct gaa ggg gag gaa gaa aag cca gaa cca gac ata agt tca gag gaa 424
 Ala Glu Gly Glu Glu Glu Lys Pro Glu Pro Asp Ile Ser Ser Glu Glu
 58 63 68 73
 tct gtc tcc act gta gaa gaa caa gag aat gaa act cca cct gct act 472
 Ser Val Ser Thr Val Glu Glu Gln Glu Asn Glu Thr Pro Pro Ala Thr
 74 79 84 89
 tcg agt gag gca gag cag cca aag ggg gaa cct gag aat gaa gag aag 520
 Ser Ser Glu Ala Glu Gln Pro Lys Gly Glu Pro Glu Asn Glu Glu Lys
 90 95 100 105
 gaa gaa aat aag tct tct gag gaa acc aaa aag gat gag aaa gat cag 568
 Glu Glu Asn Lys Ser Ser Glu Glu Thr Lys Lys Asp Glu Lys Asp Gln
 106 111 116 121
 tct aaa gaa aag gag aag aaa gtg aaa aaa aca att cct tcc tgg gct 616
 Ser Lys Glu Lys Glu Lys Lys Val Lys Lys Thr Ile Pro Ser Trp Ala
 122 127 132 137
 acc ctt tct gcc agc cag cta gcc agg gcc cag aaa caa aca ccg atg 664
 Thr Leu Ser Ala Ser Gln Leu Ala Arg Ala Gln Lys Gln Thr Pro Met
 138 143 148 153
 gct tct tcc cca cgt ccc aag atg gat gca atc tta act gag gcc att 712
 Ala Ser Ser Pro Arg Pro Lys Met Asp Ala Ile Leu Thr Glu Ala Ile
 154 159 164 169
 aag gca tgc ttc cag aag agt ggt gca tca gtg gtt gct att cga aaa 760
 Lys Ala Cys Phe Gln Lys Ser Gly Ala Ser Val Val Ala Ile Arg Lys
 170 175 180 185
 tac atc atc cat aag tat cct tct ctg gag ctg gag aga agg ggt tat 808
 Tyr Ile Ile His Lys Tyr Pro Ser Leu Glu Leu Glu Arg Arg Gly Tyr
 186 191 196 201
 ctc ctt aaa caa gca ctg aaa aga gaa tta aat aga gga gtc atc aaa 856
 Leu Leu Lys Gln Ala Leu Lys Arg Glu Leu Asn Arg Gly Val Ile Lys

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cag gtt aaa gga aaa ggt gct tct gga agt ttt gtt gtg gtt cag aaa				904
Gln Val Lys Gly Lys Gly Ala Ser Gly Ser Phe Val Val Val Gln Lys				
218	223	228	233	
tca aga aaa aca cct cag aaa tcc aga aac aga aag aat agg agc tct				952
Ser Arg Lys Thr Pro Gln Lys Ser Arg Asn Arg Lys Asn Arg Ser Ser				
234	239	244	249	
gca gtg gat cca gaa cca caa gta aaa ttg gag gat gtc ctc cca ctg				1000
Ala Val Asp Pro Glu Pro Gln Val Lys Leu Glu Asp Val Leu Pro Leu				
250	255	260	265	
gcc ttt act cgc ctt tgt gaa cct aaa gaa gct tcc tac agt ctc atc				1048
Ala Phe Thr Arg Leu Cys Glu Pro Lys Glu Ala Ser Tyr Ser Leu Ile				
266	271	276	281	
agg aaa tat gtg tct cag tat tat cct aag ctt aga gtg gac atc agg				1096
Arg Lys Tyr Val Ser Gln Tyr Tyr Pro Lys Leu Arg Val Asp Ile Arg				
282	287	292	297	
cct cag ctg ttg aag aac gct ctg cag aga gca gta gag agg ggc cag				1144
Pro Gln Leu Leu Lys Asn Ala Leu Gln Arg Ala Val Glu Arg Gly Gln				
298	303	308	313	
tta gaa cag ata act ggc aaa ggt gct tcg ggg aca ttc cag ctg aag				1192
Leu Glu Gln Ile Thr Gly Lys Gly Ala Ser Gly Thr Phe Gln Leu Lys				
314	319	324	329	
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Lys Ser Gly Glu Lys Pro Leu Leu Gly Gly Ser Leu Met Glu Tyr Ala				
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Ile Leu Ser Ala Ile Ala Ala Met Asn Glu Pro Lys Thr Cys Ser Thr				
346	351	356	361	
act gct ctg aag aag tat gtc cta gag aat cac cca gga acc aat tct				1336
Thr Ala Leu Lys Lys Tyr Val Leu Glu Asn His Pro Gly Thr Asn Ser				
362	367	372	377	
aac tat caa atg cat ttg ctg aaa aaa acc ctg cag aaa tgc gaa aag				1384
Asn Tyr Gln Met His Leu Leu Lys Lys Thr Leu Gln Lys Cys Glu Lys				
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aat ggg tgg atg gaa cag atc tct ggg aaa ggg ttc agt ggc acc ttc				1432
Asn Gly Trp Met Glu Gln Ile Ser Gly Lys Gly Phe Ser Gly Thr Phe				
394	399	404	409	
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Gln Leu Cys Phe Pro Tyr Tyr Pro Ser Pro Gly Val Leu Phe Pro Lys				
410	415	420	425	
aaa gag cca gat gat tct aga gat gag gat gaa gat gaa gat gag tca				1528
Lys Glu Pro Asp Asp Ser Arg Asp Glu Asp Glu Asp Glu Asp Glu Ser				
426	431	436	441	

tca gaa gaa gac tct gag gat gaa gag ccg cca cct aag aga agg ttg	1576
Ser Glu Glu Asp Ser Glu Asp Glu Glu Pro Pro Pro Lys Arg Arg Leu	457
442 447 452	
cag aag aaa acc cca gcc aag tcc cca ggg aag gcc gca tct gtg aag	1624
Gln Lys Lys Thr Pro Ala Lys Ser Pro Gly Lys Ala Ala Ser Val Lys	473
458 463 468	
cag aga ggg tcc aaa cct gca cct aaa gtc tca gct gcc cag cgg ggg	1672
Gln Arg Gly Ser Lys Pro Ala Pro Lys Val Ser Ala Ala Gln Arg Gly	489
474 479 484	
aaa gct agg ccc ttg cct aag aaa gca cct cct aag gcc aaa acg cct	1720
Lys Ala Arg Pro Leu Pro Lys Lys Ala Pro Pro Lys Ala Lys Thr Pro	505
490 495 500	
gcc aag aag acc aga ccc tca tcc aca gtc atc aag aaa cct agt ggt	1768
Ala Lys Lys Thr Arg Pro Ser Ser Thr Val Ile Lys Lys Pro Ser Gly	521
506 511 516	
ggc tcc tca aag aag cct gca acc agt gca aga aag gaa gta aaa ttg	1816
Gly Ser Ser Lys Lys Pro Ala Thr Ser Ala Arg Lys Glu Val Lys Leu	537
522 527 532	
ccg ggc aag ggc aaa tcc acc atg aag aag tct ttc aga gtg aaa aag	1864
Pro Gly Lys Gly Lys Ser Thr Met Lys Lys Ser Phe Arg Val Lys Lys	553
538 543 548	
taa attt tataggaaaa aagggtatca tgatgaaatt caaaatctta ttttctaagg	1921
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554	
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ctgagcttgt tccgectccc tccccggga	171
atg gcg cta tcc ggg tcg acc Met Ala Leu Ser Gly Ser Thr	1 5
ccg gcc ccg tgc tgg gag gag gat gag tgc ctg gac tac tac ggg atg Pro Ala Pro Cys Trp Glu Glu Asp Glu Cys Leu Asp Tyr Tyr Gly Met	219
8 13 18 23	
ctg tcg ctt cac cgt atg ttc gag gtg gtg ggc ggg caa ctg acc gag Leu Ser Leu His Arg Met Phe Glu Val Val Gly Gly Gln Leu Thr Glu	267
24 29 34 39	
tgc gag ctg gag ctc ctg gcc ttt ctg ctg gat gag gct cct ggc gcc Cys Glu Leu Glu Leu Leu Ala Phe Leu Leu Asp Glu Ala Pro Gly Ala	315
40 45 50 55	
gcc gga ggc tta tcc cgg gcc cgc agc ggc cta aag ctc ctg ctg gag Ala Gly Gly Leu Ser Arg Ala Arg Ser Gly Leu Lys Leu Leu Leu Glu	363
56 61 66 71	
ctg gag cgc cgc ggg cag tgc gac gag agc aac ctg cgg ctg ctg ggg Leu Glu Arg Arg Gly Gln Cys Asp Glu Ser Asn Leu Arg Leu Leu Gly	411
72 77 82 87	
caa ctc ctg cgc gtg ctg gcc cgc cac gac ctg ctg ccg cac ctg gcg Gln Leu Leu Arg Val Leu Ala Arg His Asp Leu Leu Pro His Leu Ala	459
88 93 98 103	
cgc aag cgg cgc cgg cca gtg tct cca gaa cgc tat agc tat ggc acc Arg Lys Arg Arg Arg Pro Val Ser Pro Glu Arg Tyr Ser Tyr Gly Thr	507
104 109 114 119	
tcc agc tct tca aag agg aca gag ggt agc tgc cgt cgc cgt cgg cag Ser Ser Ser Ser Lys Arg Thr Glu Gly Ser Cys Arg Arg Arg Arg Gln	555
120 125 130 135	
tca agc agt tct gca aat tct cag cag ggc tcc ccc cca acc aag cgg Ser Ser Ser Ser Ala Asn Ser Gln Gln Gly Ser Pro Pro Thr Lys Arg	603
136 141 146 151	
cag cgg cgg agt cgg ggc cgg ccc agt ggt ggt gcc aga cgg cgg cgg Gln Arg Arg Ser Arg Gly Arg Pro Ser Gly Gly Ala Arg Arg Arg Arg	651
152 157 162 167	
aga ggg gcc cca gcc gca ccc cag cag cag tca gag ccc gcc aga cct Arg Gly Ala Pro Ala Ala Pro Gln Gln Gln Ser Glu Pro Ala Arg Pro	699
168 173 178 183	
tcc tct gaa ggc aaa gtg acc aca acc aac ctg ggc ttc agc cac atc Ser Ser Glu Gly Lys Val Thr Thr Thr Asn Leu Gly Phe Ser His Ile	747
184 189 194 199	
agt ggg cac tgg agc tgg ggt gca cat ggg gcc tgc tca cct tgc cca Ser Gly His Trp Ser Trp Gly Ala His Gly Ala Cys Ser Pro Cys Pro	795

200	205	210	215	
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His Ile Ser Ser Gln Pro Gly Pro Cys Pro Ala Ser Ile Tyr Arg Pro				
216	221	226	231	
gac tct cct cac ctt ccc ccc tgc tgt cca gag ctg aac ata gac ttg				891
Asp Ser Pro His Leu Pro Pro Cys Cys Pro Glu Leu Asn Ile Asp Leu				
232	237	242	247	
cac ttg gat gtc acc tgg agt gtc aca tgg gag tgt tat ggc agc atc				939
His Leu Asp Val Thr Trp Ser Val Thr Trp Glu Cys Tyr Gly Ser Ile				
248	253	258	263	
ata cca aga agg tgg ctg ttt act ggt ttt ggc ccc atg ttc tag atc				987
Ile Pro Arg Arg Trp Leu Phe Thr Gly Phe Gly Pro Met Phe *				
264	269	274		
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tctatagtgt cacctaaatt				1067
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Met Ala Ser				
1				
aac ttt aac gac ata gtc aag cag ggc tac gtg aaa atc cgc agc agg				165
Asn Phe Asn Asp Ile Val Lys Gln Gly Tyr Val Lys Ile Arg Ser Arg				
4	9	14	19	
aag ctt ggg att ttc aga cga tgc tgg ttg gtt ttc aag aag gct tct				213
Lys Leu Gly Ile Phe Arg Arg Cys Trp Leu Val Phe Lys Lys Ala Ser				
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agc aaa gga ccc aga agg tta gaa aaa ttt cca gat gaa aag gca gct				261
Ser Lys Gly Pro Arg Arg Leu Glu Lys Phe Pro Asp Glu Lys Ala Ala				
36	41	46	51	
tat ttc aga aac ttt cat aag gta act gaa ctg cac aat atc aaa aat				309
Tyr Phe Arg Asn Phe His Lys Val Thr Glu Leu His Asn Ile Lys Asn				
52	57	62	67	

ata acc aga ctg ccc cga gag aca aag aag cat gcg gtg gca atc atc	357
Ile Thr Arg Leu Pro Arg Glu Thr Lys Lys His Ala Val Ala Ile Ile	
68 73 78 83	
ttt cac gat gaa aca tcg aag aca ttt gcc tgt gag tca gag ctg gag	405
Phe His Asp Glu Thr Ser Lys Thr Phe Ala Cys Glu Ser Glu Leu Glu	
84 89 94 99	
gcc gag gag tgg tgc aag cac ctc tgc atg gag tgt ctg ggg acc agg	453
Ala Glu Glu Trp Cys Lys His Leu Cys Met Glu Cys Leu Gly Thr Arg	
100 105 110 115	
ctc aat gac atc agc ctt ggg gag ccc gac ctt ctg gcc gca gga gtg	501
Leu Asn Asp Ile Ser Leu Gly Glu Pro Asp Leu Leu Ala Ala Gly Val	
116 121 126 131	
cag cgg gaa cag aat gag aga ttc aac gtg tat ctt atg cct aca cca	549
Gln Arg Glu Gln Asn Glu Arg Phe Asn Val Tyr Leu Met Pro Thr Pro	
132 137 142 147	
aac ctg gat att tat ggt gaa tgc aca atg cag atc act cat gaa aat	597
Asn Leu Asp Ile Tyr Gly Glu Cys Thr Met Gln Ile Thr His Glu Asn	
148 153 158 163	
atc tat ctc tgg gat atc cac aat gcc aag gtc aaa ctg gtg atg tgg	645
Ile Tyr Leu Trp Asp Ile His Asn Ala Lys Val Lys Leu Val Met Trp	
164 169 174 179	
cct ctc agc tca ctg agg aga tac ggt cgg gac tca acg tgg ttc acg	693
Pro Leu Ser Ser Leu Arg Arg Tyr Gly Arg Asp Ser Thr Trp Phe Thr	
180 185 190 195	
ttt gag tca gga aga atg tgt gac aca gga gaa gga cta ttc act ttt	741
Phe Glu Ser Gly Arg Met Cys Asp Thr Gly Glu Gly Leu Phe Thr Phe	
196 201 206 211	
caa aca agg gaa gga gaa atg atc tat cag aag gtt cat tct gcg aca	789
Gln Thr Arg Glu Gly Glu Met Ile Tyr Gln Lys Val His Ser Ala Thr	
212 217 222 227	
ctg gcc ata gct gag caa cat gaa aga tta atg cta gaa atg gaa cag	837
Leu Ala Ile Ala Glu Gln His Glu Arg Leu Met Leu Glu Met Glu Gln	
228 233 238 243	
aag gcc cgg ctt cag aca agc ttg act gaa cca atg aca tta tcc aaa	885
Lys Ala Arg Leu Gln Thr Ser Leu Thr Glu Pro Met Thr Leu Ser Lys	
244 249 254 259	
tca ata tct ctt cct cgc agc gcg tac tgg cat cac atc act cgt cag	933
Ser Ile Ser Leu Pro Arg Ser Ala Tyr Trp His His Ile Thr Arg Gln	
260 265 270 275	
aac agc gtt ggt gaa atc tac agt ttg caa gga aat cat gaa aat cgg	981
Asn Ser Val Gly Glu Ile Tyr Ser Leu Gln Gly Asn His Glu Asn Arg	
276 281 286 291	
cac tcc gat tta aca gga aag agt tgc aag aca tcc gag aac aga ttt	1029

His Ser Asp Leu Thr Gly Lys Ser Cys Lys Thr Ser Glu Asn Arg Phe	
292	307
302	
ctt gaa gaa aat gca ccc ttg gtt atg tat ggc atc act cac cat ctg	1077
Leu Glu Glu Asn Ala Pro Leu Val Met Tyr Gly Ile Thr His His Leu	
308	323
313	
318	
ttc atg gat act tct aca tgc aaa gtt gta cat gac ttg gaa taa acc	1125
Phe Met Asp Thr Ser Thr Cys Lys Val Val His Asp Leu Glu *	
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Met Ala Ser	
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aac ttt aac gac ata gtc aag cag ggc tac gtg aaa atc cgc agc agg	165
Asn Phe Asn Asp Ile Val Lys Gln Gly Tyr Val Lys Ile Arg Ser Arg	
4	19
9	
14	
aag ctt ggg att ttc aga cga tgc tgg ttg gtt ttc aag aag gct tct	213
Lys Leu Gly Ile Phe Arg Arg Cys Trp Leu Val Phe Lys Lys Ala Ser	
20	35
25	
30	
agc aaa gga ccc aga agg tta gaa aaa ttt cca gat gaa aag gca gct	261
Ser Lys Gly Pro Arg Arg Leu Glu Lys Phe Pro Asp Glu Lys Ala Ala	
36	51
41	
46	
tat ttc aga aac ttt cat aag gta act gaa ctg cac aat atc aaa aat	309
Tyr Phe Arg Asn Phe His Lys Val Thr Glu Leu His Asn Ile Lys Asn	
52	67
57	
62	
ata acc aga ctg ccc cga gag aca aag aag cat gcg gtg gca atc atc	357
Ile Thr Arg Leu Pro Arg Glu Thr Lys Lys His Ala Val Ala Ile Ile	
68	83
73	
78	
ttt cac gat gaa aca tcg aag aca ttt gcc tgt gag tca gag ctg gag	405
Phe His Asp Glu Thr Ser Lys Thr Phe Ala Cys Glu Ser Glu Leu Glu	
84	99
89	
94	
gcc gag gag tgg tgc aag cac ctc tgc atg gag tgt ctg ggg acc agg	453

Ala Glu Glu Trp Cys Lys His Leu Cys Met Glu Cys Leu Gly Thr Arg	
100 105 110 115	
ctc aat gac atc agc ctt ggg gag ccc gac ctt ctg gcc gca gga gtg	501
Leu Asn Asp Ile Ser Leu Gly Glu Pro Asp Leu Leu Ala Ala Gly Val	
116 121 126 131	
cag cgg gaa cag aat gag aga ttc aac gtg tat ctt atg cct aca cca	549
Gln Arg Glu Gln Asn Glu Arg Phe Asn Val Tyr Leu Met Pro Thr Pro	
132 137 142 147	
aac ctg gat att tat ggt gaa tgc aca atg cag atc act cat gaa aat	597
Asn Leu Asp Ile Tyr Gly Glu Cys Thr Met Gln Ile Thr His Glu Asn	
148 153 158 163	
atc tat ctc tgg gat atc cac aat gcc aag gtc aaa ctg gtg atg tgg	645
Ile Tyr Leu Trp Asp Ile His Asn Ala Lys Val Lys Leu Val Met Trp	
164 169 174 179	
cct ctc agc tca ctg agg aga tac ggt cgg gac tca acg tgg ttc acg	693
Pro Leu Ser Ser Leu Arg Arg Tyr Gly Arg Asp Ser Thr Trp Phe Thr	
180 185 190 195	
ttt gag tca gga aga atg tgt gac aca gga gaa gga cta ttc act ttt	741
Phe Glu Ser Gly Arg Met Cys Asp Thr Gly Glu Gly Leu Phe Thr Phe	
196 201 206 211	
caa aca agg gaa gga gaa atg atc tat cag aag gtt cat tct gcg aca	789
Gln Thr Arg Glu Gly Glu Met Ile Tyr Gln Lys Val His Ser Ala Thr	
212 217 222 227	
ctg gcc ata gct gag caa cat gaa aga tta atg cta gaa atg gaa cag	837
Leu Ala Ile Ala Glu Gln His Glu Arg Leu Met Leu Glu Met Glu Gln	
228 233 238 243	
aag gcc cgg gta agg ccc ctt cct tgg taa c ctatcagctt ggaaatgaat	888
Lys Ala Arg Val Arg Pro Leu Pro Trp *	
244 249	
gtcactggga tctgaaaaaa aaaaaa	914

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 <212> DNA
 <213> Homo sapiens

<220>
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ccttttgaaa gttctgttca atcagctgga tagagctggt tgttttcctc acctaaccct 180
cacagctatc ctagaggtgc ctctcctgg acggcggcag cggcggcgcg aggagccggc 240
gggcagcggc gcg atg ggg ccc ctc cgc gag agc aag aag gag cac aga 289
Met Gly Pro Leu Arg Glu Ser Lys Lys Glu His Arg
1 5 10
gtg cag cat cat gac aag gag att tct cga agc cga att ccc cgg ttg 337
Val Gln His His Asp Lys Glu Ile Ser Arg Ser Arg Ile Pro Arg Leu
13 18 23 28
att ctt cgg ccc cat atg ccc caa caa cag cac aaa gtg tcc cca gcc 385
Ile Leu Arg Pro His Met Pro Gln Gln Gln His Lys Val Ser Pro Ala
29 34 39 44
tct gag tct cct ttc tct gag gaa gag agc aga gag ttc aac ccc agc 433
Ser Glu Ser Pro Phe Ser Glu Glu Glu Ser Arg Glu Phe Asn Pro Ser
45 50 55 60
agc tct ggg cgc tca gcg agg acc gtt agc agc aac agc ttc tgc tca 481
Ser Ser Gly Arg Ser Ala Arg Thr Val Ser Ser Asn Ser Phe Cys Ser
61 66 71 76
gat gac aca ggc tgg cct agc agc cag tca gtg tct cct gtg aag aca 529
Asp Asp Thr Gly Trp Pro Ser Ser Gln Ser Val Ser Pro Val Lys Thr
77 82 87 92
ccc tca gat gct gga aac agc ccc att ggc ttt tgc cct gga agt gat 577
Pro Ser Asp Ala Gly Asn Ser Pro Ile Gly Phe Cys Pro Gly Ser Asp
93 98 103 108
gaa ggc ttc acc aga aag aaa tgc acg att gga atg gtt ggt gaa gga 625
Glu Gly Phe Thr Arg Lys Lys Cys Thr Ile Gly Met Val Gly Glu Gly
109 114 119 124
agc att cag tcc tct cga tat aag aag gaa tca aag tca ggc ctt gtg 673
Ser Ile Gln Ser Ser Arg Tyr Lys Lys Glu Ser Lys Ser Gly Leu Val
125 130 135 140
aaa cca ggt agt gaa gct gat ttt agc tcc tcg agc agc aca ggc agc 721
Lys Pro Gly Ser Glu Ala Asp Phe Ser Ser Ser Ser Ser Thr Gly Ser
141 146 151 156
att tcc gct cct gag gtc cat atg tcg act gcg gga agc aag cgg tct 769
Ile Ser Ala Pro Glu Val His Met Ser Thr Ala Gly Ser Lys Arg Ser
157 162 167 172
tct tct tca cgc aat cga ggt cct cat ggg cgg agt aat gga gct tcg 817
Ser Ser Ser Arg Asn Arg Gly Pro His Gly Arg Ser Asn Gly Ala Ser
173 178 183 188
tca cac aag cct ggc agc agc cca tca tcc ccg cgg gaa aag gac ctt 865
Ser His Lys Pro Gly Ser Ser Pro Ser Ser Pro Arg Glu Lys Asp Leu
189 194 199 204

Leu	Leu	Val	Gly	Asp	Ser	Ile	Ala	Asn	Ser	Thr	Asp	Leu	Phe	Asp	Glu		
429					434					439					444		
ata	gtg	aca	gcc	acc	acc	aca	gaa	tct	ggg	gac	ctg	gag	ctt	gtg	cat	1633	
Ile	Val	Thr	Ala	Thr	Thr	Thr	Glu	Ser	Gly	Asp	Leu	Glu	Leu	Val	His		
445					450					455					460		
tcc	acc	cct	ggg	gct	aac	gtc	ctg	gag	ctg	ctg	ccc	ata	gtc	atg	ggg	1681	
Ser	Thr	Pro	Gly	Ala	Asn	Val	Leu	Glu	Leu	Leu	Pro	Ile	Val	Met	Gly		
461					466					471					476		
cag	gag	gag	ggc	agt	gtg	gtg	gtg	gag	cga	gcc	gtt	cag	acc	gac	gtg	1729	
Gln	Glu	Glu	Gly	Ser	Val	Val	Val	Glu	Arg	Ala	Val	Gln	Thr	Asp	Val		
477					482					487					492		
gtg	ccc	tac	agc	cca	gcc	atc	tca	gag	ctc	att	cag	agt	gtg	ctg	cag	1777	
Val	Pro	Tyr	Ser	Pro	Ala	Ile	Ser	Glu	Leu	Ile	Gln	Ser	Val	Leu	Gln		
493					498					503					508		
aag	ctc	cag	gac	ccc	tgt	ccc	tcg	agc	ttg	gcg	tcc	cct	gat	gag	tct	1825	
Lys	Leu	Gln	Asp	Pro	Cys	Pro	Ser	Ser	Leu	Ala	Ser	Pro	Asp	Glu	Ser		
509					514					519					524		
gaa	cca	gac	tcg	atg	gag	agc	ttc	cca	gag	tcc	ctc	tct	gcc	tta	gtg	1873	
Glu	Pro	Asp	Ser	Met	Glu	Ser	Phe	Pro	Glu	Ser	Leu	Ser	Ala	Leu	Val		
525					530					535					540		
gtt	gat	tta	act	cca	aga	aat	cca	aac	tca	gcc	atc	ctt	ttg	tct	ccc	1921	
Val	Asp	Leu	Thr	Pro	Arg	Asn	Pro	Asn	Ser	Ala	Ile	Leu	Leu	Ser	Pro		
541					546					551					556		
gtg	gag	acc	ccc	tac	gcc	aat	gtg	gat	gca	gaa	gtt	cat	gca	aac	cgc	1969	
Val	Glu	Thr	Pro	Tyr	Ala	Asn	Val	Asp	Ala	Glu	Val	His	Ala	Asn	Arg		
557					562					567					572		
ctc	atg	aga	gag	ctg	gat	ttt	gca	gcc	tgc	gtg	gaa	gag	agg	ttg	gat	2017	
Leu	Met	Arg	Glu	Leu	Asp	Phe	Ala	Ala	Cys	Val	Glu	Glu	Arg	Leu	Asp		
573					578					583					588		
ggg	gtc	atc	cca	ctg	gct	cgc	ggg	ggc	gtc	gtg	agg	cag	tac	tgg	agc	2065	
Gly	Val	Ile	Pro	Leu	Ala	Arg	Gly	Gly	Val	Val	Arg	Gln	Tyr	Trp	Ser		
589					594					599					604		
agc	agc	ttc	ctg	gtg	gat	ctc	ctg	gct	gtg	gct	gcc	ccc	gtg	gtc	ccc	2113	
Ser	Ser	Phe	Leu	Val	Asp	Leu	Leu	Ala	Val	Ala	Ala	Pro	Val	Val	Pro		
605					610					615					620		
acg	gtt	ctg	tgg	gca	ttc	agt	act	cag	aga	ggg	gga	acg	gat	cct	gtg	2161	
Thr	Val	Leu	Trp	Ala	Phe	Ser	Thr	Gln	Arg	Gly	Gly	Thr	Asp	Pro	Val		
621					626					631					636		
tat	aac	atc	ggg	gcc	ttg	ctc	agg	ggc	tgt	tgc	gtg	gtt	gcc	ctg	cat	2209	
Tyr	Asn	Ile	Gly	Ala	Leu	Leu	Arg	Gly	Cys	Cys	Val	Val	Ala	Leu	His		
637					642					647					652		
tcg	ctc	cgc	cgc	acc	gcc	ttc	cgt	atc	aaa	acc	taa	atag	aagttgtgtg			2259	
Ser	Leu	Arg	Arg	Thr	Ala	Phe	Arg	Ile	Lys	Thr	*						

653	658	663	
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ttgaagcctg	ttcactgttt	aaaaccggag	gtatcttcaa aggcattggag acctgggtcc 2439
agtaaagtgc	ccaccagtgg	ggatatagaaa	gcatgtctcat gaccctgccg tgtcgtctga 2499
ggtagccgtt	cttatactag	tgggttcagga	agagaaaacg cagtttgac tttcaagaca 2559
gcttctctaa	ggctggcatg	ttatctcctt	gctttgcttt ttgccgtttt aaaatgtgta 2619
attgttccag	cattccaatg	gtcttgtgca	tagcagggga ctgtaaccaa aaataaacat 2679
gtatttgtgt	aattggtttg	aagaagtctt	gaatagctct ttactgtctt acttgggggtt 2739
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caataggggg	tctgtaaaaa	ttgaattaaa	ttaggaagag ggaaaaagag ttagttatta 3099
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aaaaggttgt aatgggagag ttgttcctac tgatgggggc agatatgatg ttcatttggg	180
ggagagg atg cgg tat gct gta tac tgg gat gaa ctg gca tcg gaa gtg	229
Met Arg Tyr Ala Val Tyr Trp Asp Glu Leu Ala Ser Glu Val	
1 5 10	

aga cga tgt acg tgg ttt tac aag ggg gac aaa gac aat aag tat gtt	277
Arg Arg Cys Thr Trp Phe Tyr Lys Gly Asp Lys Asp Asn Lys Tyr Val	
15 20 25 30	
ccc tac tcg gag agc ttc agc caa gtt tta gag gaa act tac atg ctt	325
Pro Tyr Ser Glu Ser Phe Ser Gln Val Leu Glu Glu Thr Tyr Met Leu	
31 36 41 46	
gct gta act ttg gat gaa tgg aaa aag aaa ctg gaa tct ccc aac aga	373
Ala Val Thr Leu Asp Glu Trp Lys Lys Lys Leu Glu Ser Pro Asn Arg	
47 52 57 62	
gaa att att att tta cac aat cca aag ctt atg gtg cat tac cag cca	421
Glu Ile Ile Ile Leu His Asn Pro Lys Leu Met Val His Tyr Gln Pro	
63 68 73 78	
gtt gca ggg tct gat gat tgg ggt tca aca ccc atg gag cag ggt cga	469
Val Ala Gly Ser Asp Asp Trp Gly Ser Thr Pro Met Glu Gln Gly Arg	
79 84 89 94	
cca aga act gtg aag aga gga gtt gag aac atc tct gtt gac att cat	517
Pro Arg Thr Val Lys Arg Gly Val Glu Asn Ile Ser Val Asp Ile His	
95 100 105 110	
tgt gga gaa cct tta caa ata gat cac ttg gtt ttt gta gtc cat ggg	565
Cys Gly Glu Pro Leu Gln Ile Asp His Leu Val Phe Val Val His Gly	
111 116 121 126	
att gga cca gct tgt gat ctc cgc ttt cga agc att gta cag tgt gtt	613
Ile Gly Pro Ala Cys Asp Leu Arg Phe Arg Ser Ile Val Gln Cys Val	
127 132 137 142	
aat gat ttt cgc agt gtt tcc ttg aac ttg cta cag aca cat ttt aag	661
Asn Asp Phe Arg Ser Val Ser Leu Asn Leu Leu Gln Thr His Phe Lys	
143 148 153 158	
aaa gcc caa gaa aat cag cag att ggg agg gta gaa ttt ctt cca gtc	709
Lys Ala Gln Glu Asn Gln Gln Ile Gly Arg Val Glu Phe Leu Pro Val	
159 164 169 174	
aac tgg cac agt cct ttg cat tct act ggt gtg gat gta gat ctg cag	757
Asn Trp His Ser Pro Leu His Ser Thr Gly Val Asp Val Asp Leu Gln	
175 180 185 190	
cga ata acc ctg ccc agc att aac cgc ctc agg cac ttc acc aat gac	805
Arg Ile Thr Leu Pro Ser Ile Asn Arg Leu Arg His Phe Thr Asn Asp	
191 196 201 206	
aca att ctg gat gtc ttc ttc tac aat agt ccc acc tac tgt cag act	853
Thr Ile Leu Asp Val Phe Phe Tyr Asn Ser Pro Thr Tyr Cys Gln Thr	
207 212 217 222	
att gtg gac aca gtt gct tct gaa atg aac cga ata tac aca ctt ttt	901
Ile Val Asp Thr Val Ala Ser Glu Met Asn Arg Ile Tyr Thr Leu Phe	
223 228 233 238	
cta cag agg aac cct gat ttc aaa ggg ggt gta tcc att gct ggt cat	949

Leu	Gln	Arg	Asn	Pro	Asp	Phe	Lys	Gly	Gly	Val	Ser	Ile	Ala	Gly	His	
239					244					249					254	
agt	tta	ggt	tcg	ctt	ata	ttg	ttt	gat	atc	cta	aca	aat	cag	aaa	gat	997
Ser	Leu	Gly	Ser	Leu	Ile	Leu	Phe	Asp	Ile	Leu	Thr	Asn	Gln	Lys	Asp	
255					260					265					270	
tct	ttg	ggg	gat	att	gac	agt	gaa	aag	ggt	tcg	cta	aat	att	gta	atg	1045
Ser	Leu	Gly	Asp	Ile	Asp	Ser	Glu	Lys	Gly	Ser	Leu	Asn	Ile	Val	Met	
271					276					281					286	
gat	caa	gga	gat	aca	cct	aca	cta	gag	gaa	gat	ttg	aag	aaa	ctt	cag	1093
Asp	Gln	Gly	Asp	Thr	Pro	Thr	Leu	Glu	Glu	Asp	Leu	Lys	Lys	Leu	Gln	
287					292					297					302	
ctc	tct	gaa	ttc	ttt	gat	atc	ttt	gag	aag	gag	aaa	gta	gat	aag	gaa	1141
Leu	Ser	Glu	Phe	Phe	Asp	Ile	Phe	Glu	Lys	Glu	Lys	Val	Asp	Lys	Glu	
303					308					313					318	
gct	ctg	gct	tta	tgt	aca	gac	cga	gat	ctt	cag	gaa	ata	gga	att	cct	1189
Ala	Leu	Ala	Leu	Cys	Thr	Asp	Arg	Asp	Leu	Gln	Glu	Ile	Gly	Ile	Pro	
319					324					329					334	
tta	gga	cca	aga	aag	aag	ata	tta	aac	tat	ttc	agc	acc	aga	aaa	aac	1237
Leu	Gly	Pro	Arg	Lys	Lys	Ile	Leu	Asn	Tyr	Phe	Ser	Thr	Arg	Lys	Asn	
335					340					345					350	
tca	atg	ggt	att	aag	aga	cca	gcc	ccg	cag	cct	gct	tca	ggg	gca	aac	1285
Ser	Met	Gly	Ile	Lys	Arg	Pro	Ala	Pro	Gln	Pro	Ala	Ser	Gly	Ala	Asn	
351					356					361					366	
atc	ccc	aaa	gaa	tct	gag	ttc	tgc	agt	agc	agt	aat	act	aga	aat	ggt	1333
Ile	Pro	Lys	Glu	Ser	Glu	Phe	Cys	Ser	Ser	Ser	Asn	Thr	Arg	Asn	Gly	
367					372					377					382	
gac	tat	ctg	gat	gtt	ggc	att	ggg	cag	gtg	tct	gtg	aaa	tac	ccc	cgg	1381
Asp	Tyr	Leu	Asp	Val	Gly	Ile	Gly	Gln	Val	Ser	Val	Lys	Tyr	Pro	Arg	
383					388					393					398	
ctc	atc	tat	aaa	cca	gag	ata	ttc	ttt	gcc	ttt	gga	tct	ccc	att	gga	1429
Leu	Ile	Tyr	Lys	Pro	Glu	Ile	Phe	Phe	Ala	Phe	Gly	Ser	Pro	Ile	Gly	
399					404					409					414	
atg	ttc	ctt	act	gtc	cga	gga	cta	aaa	aga	att	gat	ccc	aac	tac	aga	1477
Met	Phe	Leu	Thr	Val	Arg	Gly	Leu	Lys	Arg	Ile	Asp	Pro	Asn	Tyr	Arg	
415					420					425					430	
ttt	cca	acg	tgc	aaa	ggt	ttc	ttc	aat	att	tat	cac	cct	ttt	gat	cct	1525
Phe	Pro	Thr	Cys	Lys	Gly	Phe	Phe	Asn	Ile	Tyr	His	Pro	Phe	Asp	Pro	
431					436					441					446	
gtg	gcc	tat	agg	att	gaa	cca	atg	gtg	gtc	cca	gga	gtg	gaa	ttt	gag	1573
Val	Ala	Tyr	Arg	Ile	Glu	Pro	Met	Val	Val	Pro	Gly	Val	Glu	Phe	Glu	
447					452					457					462	
cca	atg	ctg	atc	cca	cat	cat	aaa	ggc	agg	aag	cgg	atg	cac	tta	gaa	1621
Pro	Met	Leu	Ile	Pro	His	His	Lys	Gly	Arg	Lys	Arg	Met	His	Leu	Glu	

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ctaaataaaa ccttttagtg gtgcctttat ggtgaaacag aatttgtcac ctgccatttc	2956
tacttgagct aaggtagtat tgtgtatcct ctttccttct taggtatcca taatccacaa	3016
agcatattta aaaggctctt ggcacgggca gcattgggtg agcaggtagg tttggctagg	3076
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attccagagt cagtgtcagc tgagtctgga acatatgaag tgaggtttac ttctaagaac	3196
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agtcatatat tatttgcgct gcttcatttg tatcatgtgc aatctctaga ccaaccctat	4036
ttttaaactc tggtacagca tcattttgta catattccca gctgcagaac tagtatcact	4096
tatctcagca aaagagattg tttgcatgga aagattaata gcactgatta gatttcta	4156
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 tttatatatt tatatttaga gattctaaaa attgcatgat gtttgatatt attactactt 180
 tatattgcag aatgtgccca tttacttttg gctcacaatg ctccagtcaa ggtgaaaaat 240
 gctcagggat ggagccctct ggcggaagcc atcagctatg gagataggca g atg att 297
 Met Ile
 1
 aca gct ctt ttg agg aag ctt aag cag caa tcc agg gaa agt gtt gaa 345
 Thr Ala Leu Leu Arg Lys Leu Lys Gln Gln Ser Arg Glu Ser Val Glu
 3 8 13 18
 gaa aaa cga cct cga tta tta aaa gcc ctg aaa gag cta ggt gac ttt 393
 Glu Lys Arg Pro Arg Leu Leu Lys Ala Leu Lys Glu Leu Gly Asp Phe
 19 24 29 34
 tat cta gaa ctt cac tgg gat ttt caa agc tgg gtg cct tta ctt tcc 441
 Tyr Leu Glu Leu His Trp Asp Phe Gln Ser Trp Val Pro Leu Leu Ser
 35 40 45 50
 cga att ctg cct tcc gat gca tgt aaa ata tac aaa caa ggt atc aat 489
 Arg Ile Leu Pro Ser Asp Ala Cys Lys Ile Tyr Lys Gln Gly Ile Asn
 51 56 61 66
 atc agg ctt gac aca act ctc ata gac ttt act gac atg aag tgc caa 537
 Ile Arg Leu Asp Thr Thr Leu Ile Asp Phe Thr Asp Met Lys Cys Gln
 67 72 77 82
 cga ggg gat cta agc ttc att ttc aat ggg gat gcg gcg ccc tct gaa 585
 Arg Gly Asp Leu Ser Phe Ile Phe Asn Gly Asp Ala Ala Pro Ser Glu
 83 88 93 98
 tct ttt gta gta tta gac aat gaa caa aaa gtt tat cag cga ata cat 633
 Ser Phe Val Val Leu Asp Asn Glu Gln Lys Val Tyr Gln Arg Ile His
 99 104 109 114
 cat gag gaa tca gag atg gaa aca gaa gaa gag gtg gat att tta atg 681
 His Glu Glu Ser Glu Met Glu Thr Glu Glu Glu Val Asp Ile Leu Met
 115 120 125 130
 agc agt gat att tac tct gca act tta tca aca aaa tca att tct ttc 729
 Ser Ser Asp Ile Tyr Ser Ala Thr Leu Ser Thr Lys Ser Ile Ser Phe

131	136	141	146	
acg cgt gcc cag aca gga tgg ctt ttt cgg gaa gat aaa aca gaa aga				777
Thr Arg Ala Gln Thr Gly Trp Leu Phe Arg Glu Asp Lys Thr Glu Arg				
147	152	157	162	
gta gga aac ttt ttg gca gac ttt tac ctg gtg aat gga ctt gtt tta				825
Val Gly Asn Phe Leu Ala Asp Phe Tyr Leu Val Asn Gly Leu Val Leu				
163	168	173	178	
gaa tca agg aaa aga aga gaa cat ctc agt gaa gag gat att ctt cga				873
Glu Ser Arg Lys Arg Arg Glu His Leu Ser Glu Glu Asp Ile Leu Arg				
179	184	189	194	
aat aag gcc atc atg gag agt ttg agt aaa ggt gga aac ata atg gaa				921
Asn Lys Ala Ile Met Glu Ser Leu Ser Lys Gly Gly Asn Ile Met Glu				
195	200	205	210	
cag aat ttt gag ccg att cga aga cag tct ctt aca cct cct cct cag				969
Gln Asn Phe Glu Pro Ile Arg Arg Gln Ser Leu Thr Pro Pro Pro Gln				
211	216	221	226	
aac act att aca tgg gaa gaa tat ata tct gct gaa aat gga aaa gct				1017
Asn Thr Ile Thr Trp Glu Glu Tyr Ile Ser Ala Glu Asn Gly Lys Ala				
227	232	237	242	
cct cat ctg ggt aga gaa ttg gtg tgc aaa gag agt aag aaa acg ttt				1065
Pro His Leu Gly Arg Glu Leu Val Cys Lys Glu Ser Lys Lys Thr Phe				
243	248	253	258	
aaa gct acg ata gcc atg agc cag gaa ttt ccc tta ggg ata gag tta				1113
Lys Ala Thr Ile Ala Met Ser Gln Glu Phe Pro Leu Gly Ile Glu Leu				
259	264	269	274	
tta ttg aat gtt tta gaa gta gta gct ccc ttc aag cac ttt aac aag				1161
Leu Leu Asn Val Leu Glu Val Val Ala Pro Phe Lys His Phe Asn Lys				
275	280	285	290	
ctt aga gaa ttt gtt cag atg aag ctt cct cca ggc ttt cct gta aaa				1209
Leu Arg Glu Phe Val Gln Met Lys Leu Pro Pro Gly Phe Pro Val Lys				
291	296	301	306	
tta gat ata cct gtg ttt ccc aca atc aca gcc act gtg act ttt cag				1257
Leu Asp Ile Pro Val Phe Pro Thr Ile Thr Ala Thr Val Thr Phe Gln				
307	312	317	322	
gag ttt cga tac gat gaa ttt gat ggc tcc atc ttt act ata cct gat				1305
Glu Phe Arg Tyr Asp Glu Phe Asp Gly Ser Ile Phe Thr Ile Pro Asp				
323	328	333	338	
gac tac aag gaa gac cca agc cgt ttt cct gat ctt taa ctgacgtgga				1354
Asp Tyr Lys Glu Asp Pro Ser Arg Phe Pro Asp Leu *				
339	344	349		
aaaggatgcc gtctaacc aa ggaagaaaa tacagagacc ctagaagtgg atccaaatag				1414
aagggacaaa tgctttcagt gaagaaaagg gaattacaca ttgaatcgac acatcagtaa				1474

tacgatacag tgaaatgggc ctctaataag aatttcagcg agttttctga tgtgccattt 1534
 tttgtctttt taaaaatata catattataa atgtaatagt ttgacacatt aatgacccta 1594
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 Ala Leu Gly Arg Arg Lys Gly Val Trp Leu Arg Leu Arg Lys Ile Leu
 4 9 14 19
 ttc tgt gtt ttg ggg ttg tac att gcc att cca ttt ctc atc aaa cta 153
 Phe Cys Val Leu Gly Leu Tyr Ile Ala Ile Pro Phe Leu Ile Lys Leu
 20 25 30 35
 tgt cct gga ata cag gcc aaa ctg att ttc ttg aat ttc gta aga gtt 201
 Cys Pro Gly Ile Gln Ala Lys Leu Ile Phe Leu Asn Phe Val Arg Val
 36 41 46 51
 ccc tat ttc att gat ttg aaa aaa cca cag gat caa ggt ttg aat cac 249
 Pro Tyr Phe Ile Asp Leu Lys Lys Pro Gln Asp Gln Gly Leu Asn His
 52 57 62 67
 acg tgt aac tac tac ctg cag cca gag gaa gac gtg acc att gga gtc 297
 Thr Cys Asn Tyr Tyr Leu Gln Pro Glu Glu Asp Val Thr Ile Gly Val
 68 73 78 83
 tgg cac acc gtc cct gca gtc tgg tgg aag aac gcc caa ggc aaa gac 345
 Trp His Thr Val Pro Ala Val Trp Trp Lys Asn Ala Gln Gly Lys Asp
 84 89 94 99
 cag atg tgg tat gag gat gcc ttg gct tcc agc cac cct atc att ctg 393
 Gln Met Trp Tyr Glu Asp Ala Leu Ala Ser Ser His Pro Ile Ile Leu
 100 105 110 115
 tac ctg cat ggg aac gca ggt acc aga gga ggc gac cac cgc gtg gag 441
 Tyr Leu His Gly Asn Ala Gly Thr Arg Gly Gly Asp His Arg Val Glu
 116 121 126 131

ctt tac aag gtg ctg agt tcc ctt ggt tac cat gtg gtc acc ttt gac	489
Leu Tyr Lys Val Leu Ser Ser Leu Gly Tyr His Val Val Thr Phe Asp	
132 137 142 147	
tac aga ggt tgg ggt gac tca gtg gga acg cca tct gag cgg ggc atg	537
Tyr Arg Gly Trp Gly Asp Ser Val Gly Thr Pro Ser Glu Arg Gly Met	
148 153 158 163	
acc tat gac gca ctc cac gtt ttt gac tgg atc aaa gca aga agt ggt	585
Thr Tyr Asp Ala Leu His Val Phe Asp Trp Ile Lys Ala Arg Ser Gly	
164 169 174 179	
gac aac ccc gtg tac atc tgg ggc cac tct ctg ggc act ggc gtg gcg	633
Asp Asn Pro Val Tyr Ile Trp Gly His Ser Leu Gly Thr Gly Val Ala	
180 185 190 195	
aca aat ctg gtg cgg cgc ctc tgt gag cga gag acg cct cca gat gcc	681
Thr Asn Leu Val Arg Arg Leu Cys Glu Arg Glu Thr Pro Pro Asp Ala	
196 201 206 211	
ctt ata ttg gaa tct cca ttc act aat atc cgc gaa gaa gct aag agc	729
Leu Ile Leu Glu Ser Pro Phe Thr Asn Ile Arg Glu Glu Ala Lys Ser	
212 217 222 227	
cat cca ttt tca gtg ata tat cga tac ttc cct ggg ttt gac tgg ttc	777
His Pro Phe Ser Val Ile Tyr Arg Tyr Phe Pro Gly Phe Asp Trp Phe	
228 233 238 243	
ttc ctt gat cct att aca agt agt gga att aaa ttt gca aat gat gaa	825
Phe Leu Asp Pro Ile Thr Ser Ser Gly Ile Lys Phe Ala Asn Asp Glu	
244 249 254 259	
aac gtg aag cac atc tcc tgt ccc ctg ctc atc ctg cac gct gag gac	873
Asn Val Lys His Ile Ser Cys Pro Leu Leu Ile Leu His Ala Glu Asp	
260 265 270 275	
gac ccg gtg gtg ccc ttc cag ctt ggc aga aag ctc tat agc atc gcc	921
Asp Pro Val Val Pro Phe Gln Leu Gly Arg Lys Leu Tyr Ser Ile Ala	
276 281 286 291	
gca cca gct cga agc ttc cga gac ttc aaa gtt cag ttt gtg ccc ttt	969
Ala Pro Ala Arg Ser Phe Arg Asp Phe Lys Val Gln Phe Val Pro Phe	
292 297 302 307	
cat tca gac ctt ggc tac agg cac aaa tac att tac aag agc cct gag	1017
His Ser Asp Leu Gly Tyr Arg His Lys Tyr Ile Tyr Lys Ser Pro Glu	
308 313 318 323	
ctg cca cgg ata ctg agg gaa ttc ctg ggg aag tcg gag cct gag cac	1065
Leu Pro Arg Ile Leu Arg Glu Phe Leu Gly Lys Ser Glu Pro Glu His	
324 329 334 339	
cag cac tga gcctggc cgtgggaagg aagcatgaag acctctgccc tcctcccggt	1121
Gln His *	
340	

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ggagcccagc tcgcacctgg agagcacctc agatcccagg tggggaggcc cctgcaggcc 1241
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agtggaagtg cccgggatct gcacttcctc ccctttcacc tacctgtaca cctaacctgg 1661
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<213> Homo sapiens

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ctaattgttt ctgtttctct ttatcatcat caaacattgc agctacgact acctgtcatt 180
tatcccgcgc tcggatatca tgtgatattt gtctgtgtct tctttttaaa aacactgtcg 240
tcatatttgt ggtctaatac ttgttttctt cccccctagg aggaatcatt atagattcta 300
aaaatatatt ttcccttctc tgtggacttg gtataaaacg tagctttttt tctgcttgga 360
tttattttct aaaaatcaac accgtaaacc catatcagat acaacaaaat tggggtagtt 420
aaaacc atg agt tgt gga aat gag ttt gtg gaa aca tta aaa aaa att 468
      Met Ser Cys Gly Asn Glu Phe Val Glu Thr Leu Lys Lys Ile
        1             5             10

ggg tat ccc aaa gct gat aat ctt aat gga gaa gac ttt gac tgg ttg 516
Gly Tyr Pro Lys Ala Asp Asn Leu Asn Gly Glu Asp Phe Asp Trp Leu
  15             20             25             30
/
ttt gag ggc gtt gaa gat gaa tcg ttt ctg aag tgg ttt tgt ggg aat 564
Phe Glu Gly Val Glu Asp Glu Ser Phe Leu Lys Trp Phe Cys Gly Asn

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31	36	41	46	
gtg aat gaa cag aac	gtg ttg tct gaa aga	gaa ttg gaa gct ttt agc	612	
Val Asn Glu Gln Asn	Val Leu Ser Glu Arg	Glu Leu Glu Ala Phe Ser		
47	52	57	62	
att ctt cag aaa tca	ggc aag cct att cta	gaa ggg gcg gca ttg gat	660	
Ile Leu Gln Lys Ser	Gly Lys Pro Ile Leu	Glu Gly Ala Ala Leu Asp		
63	68	73	78	
gaa gct ctt aaa acg	tgt aaa act tct gat	ttg aag aca cct aga ctg	708	
Glu Ala Leu Lys Thr	Cys Lys Thr Ser Asp	Leu Lys Thr Pro Arg Leu		
79	84	89	94	
gat gat aaa gag ctg	gag aaa tta gag gat	gag gtt caa act cta ctg	756	
Asp Asp Lys Glu Leu	Glu Lys Leu Glu Asp	Glu Val Gln Thr Leu Leu		
95	100	105	110	
aaa tta aag aac cta	aaa att cag cga cgt	aat aaa tgt caa ttg atg	804	
Lys Leu Lys Asn Leu	Lys Ile Gln Arg Arg	Asn Lys Cys Gln Leu Met		
111	116	121	126	
gct tca gta act agc	cac aaa tct ctg agg	tta aat gct aaa gaa gaa	852	
Ala Ser Val Thr Ser	His Lys Ser Leu Arg	Leu Asn Ala Lys Glu Glu		
127	132	137	142	
gaa gcc act aaa aag	ctg aag cag agt caa	gga att cta aat gca atg	900	
Glu Ala Thr Lys Lys	Leu Lys Gln Ser Gln	Gly Ile Leu Asn Ala Met		
143	148	153	158	
atc act aag atc agt	aat gaa ctt cag gct	ctt act gat gaa gtt aca	948	
Ile Thr Lys Ile Ser	Asn Glu Leu Gln Ala	Leu Thr Asp Glu Val Thr		
159	164	169	174	
caa ttg atg atg ttc	ttc aga cat tct aat	tta ggt caa ggg aca aat	996	
Gln Leu Met Met Phe	Phe Arg His Ser Asn	Leu Gly Gln Gly Thr Asn		
175	180	185	190	
cca ctg gta ttt tta	tcg caa ttt tcc ttg	gaa aaa tac cta agt cag	1044	
Pro Leu Val Phe Leu	Ser Gln Phe Ser Leu	Glu Lys Tyr Leu Ser Gln		
191	196	201	206	
gaa gag caa agc aca	gca gca tta act ttg	tat acc aaa aaa cag ttc	1092	
Glu Glu Gln Ser Thr	Ala Ala Leu Thr Leu	Tyr Thr Lys Lys Gln Phe		
207	212	217	222	
ttt cag ggt ata cat	gaa gta gtt gaa agt	tca aat gaa gac aat ttt	1140	
Phe Gln Gly Ile His	Glu Val Val Glu Ser	Ser Asn Glu Asp Asn Phe		
223	228	233	238	
caa ctt tta gat ata	cag aca cca tct att	tgt gat aat caa gaa atc	1188	
Gln Leu Leu Asp Ile	Gln Thr Pro Ser Ile	Cys Asp Asn Gln Glu Ile		
239	244	249	254	
ctt gag gag aga cga	cta gag atg gct aga	ctg cag ctc gca tac att	1236	
Leu Glu Glu Arg Arg	Leu Glu Met Ala Arg	Leu Gln Leu Ala Tyr Ile		
255	260	265	270	

tgt gct caa cat cag tta att cac tta aaa gca agt aat tcg agc atg	1284
Cys Ala Gln His Gln Leu Ile His Leu Lys Ala Ser Asn Ser Ser Met	
271 276 281 286	
aag tca agt ata aaa tgg gca gag gag agt ctt cac agc cta acc agc	1332
Lys Ser Ser Ile Lys Trp Ala Glu Glu Ser Leu His Ser Leu Thr Ser	
287 292 297 302	
aag gct gtg gac aaa gaa aat ttg gat gct aaa att tct agc ttg acc	1380
Lys Ala Val Asp Lys Glu Asn Leu Asp Ala Lys Ile Ser Ser Leu Thr	
303 308 313 318	
agt gag att atg aaa ctt gaa aaa gag gtc act caa ata aaa gac aga	1428
Ser Glu Ile Met Lys Leu Glu Lys Glu Val Thr Gln Ile Lys Asp Arg	
319 324 329 334	
agt tta cct gct gtg gta aga gag aat gcc cag tta ttg aat atg cca	1476
Ser Leu Pro Ala Val Val Arg Glu Asn Ala Gln Leu Leu Asn Met Pro	
335 340 345 350	
gtg gta aag gga gat ttt gat ctg cag att gct aaa caa gat tat tat	1524
Val Val Lys Gly Asp Phe Asp Leu Gln Ile Ala Lys Gln Asp Tyr Tyr	
351 356 361 366	
aca gca aga caa gag tta gtt tta aat caa tta ata aaa caa aag gca	1572
Thr Ala Arg Gln Glu Leu Val Leu Asn Gln Leu Ile Lys Gln Lys Ala	
367 372 377 382	
tca ttt gaa ctt cta cag tta tca tat gaa att gaa tta aga aag cat	1620
Ser Phe Glu Leu Leu Gln Leu Ser Tyr Glu Ile Glu Leu Arg Lys His	
383 388 393 398	
cgg gac ata tat cgt caa ctt gaa aat ttg gtt caa gaa ctt agt caa	1668
Arg Asp Ile Tyr Arg Gln Leu Glu Asn Leu Val Gln Glu Leu Ser Gln	
399 404 409 414	
agt aac atg atg ctc tac aag caa tta gaa atg tta aca gat cca tca	1716
Ser Asn Met Met Leu Tyr Lys Gln Leu Glu Met Leu Thr Asp Pro Ser	
415 420 425 430	
gtt tct caa cag ata aat cca agg aat acc att gat act aag gat tat	1764
Val Ser Gln Gln Ile Asn Pro Arg Asn Thr Ile Asp Thr Lys Asp Tyr	
431 436 441 446	
tct act cat agg ctt tac caa gtt ttg gag gga gag aat aag aaa aaa	1812
Ser Thr His Arg Leu Tyr Gln Val Leu Glu Gly Glu Asn Lys Lys Lys	
447 452 457 462	
gaa ttg ttt cta act cat gga aac ctt gag gaa gtg gct gag aaa ttg	1860
Glu Leu Phe Leu Thr His Gly Asn Leu Glu Glu Val Ala Glu Lys Leu	
463 468 473 478	
aaa cag aat att tct tta gta caa gat cag ttg gca gta tct gct caa	1908
Lys Gln Asn Ile Ser Leu Val Gln Asp Gln Leu Ala Val Ser Ala Gln	
479 484 489 494	

gaa cat tct ttc ttt ctg tcc aaa cgg aat aag gat gtg gac atg ctt	1956
Glu His Ser Phe Phe Leu Ser Lys Arg Asn Lys Asp Val Asp Met Leu	
495 500 505 510	
tgt gat act ttg tat caa gga gga aat cag ctt ttg ctt agt gat cag	2004
Cys Asp Thr Leu Tyr Gln Gly Gly Asn Gln Leu Leu Leu Ser Asp Gln	
511 516 521 526	
gag tta aca gag cag ttt cat aaa gtt gaa tct caa ctg aat aag cta	2052
Glu Leu Thr Glu Gln Phe His Lys Val Glu Ser Gln Leu Asn Lys Leu	
527 532 537 542	
aat cat ctc ctc act gat att ctt gct gat gtg aag aca aaa aga aaa	2100
Asn His Leu Leu Thr Asp Ile Leu Ala Asp Val Lys Thr Lys Arg Lys	
543 548 553 558	
act ttg gca aat aat aaa tta cat caa atg gaa aga gaa ttc tat gta	2148
Thr Leu Ala Asn Asn Lys Leu His Gln Met Glu Arg Glu Phe Tyr Val	
559 564 569 574	
tat ttt tta aaa gat gaa gat tat ctg aaa gat att gtg gag aat tta	2196
Tyr Phe Leu Lys Asp Glu Asp Tyr Leu Lys Asp Ile Val Glu Asn Leu	
575 580 585 590	
gaa act caa tca aag att aag gct gtt agt ctt gaa gat tga aaattac	2245
Glu Thr Gln Ser Lys Ile Lys Ala Val Ser Leu Glu Asp *	
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tctccatctc ctgggtcctg tgaggcgcag cccatcatgg ggccattggt caggtgcacc	180
ctttgtctcc gggctcatcc accatc atg atc cat gac ttg tgc ctc gtc ttc	233
Met Ile His Asp Leu Cys Leu Val Phe	
1 5 /	
ccg gcc cca gcc aag gct gtc gtt tac gtg tgc gac att cag gag ctg	281
Pro Ala Pro Ala Lys Ala Val Val Tyr Val Ser Asp Ile Gln Glu Leu	

10	15	20	25	
tac atc cgt gtg gtt gac aag gtg gag att ggg aag aca gtg aag gca				329
Tyr Ile Arg Val Val Asp Lys Val Glu Ile Gly Lys Thr Val Lys Ala				
26	31	36	41	
tac gtc cgc gtg ctg gac ttg cac aag aag ccc ttc ctt gcc aaa tac				377
Tyr Val Arg Val Leu Asp Leu His Lys Lys Pro Phe Leu Ala Lys Tyr				
42	47	52	57	
ttc ccc ttt atg gac ctg aag ctc cga gca gcc tcc ccg atc att aca				425
Phe Pro Phe Met Asp Leu Lys Leu Arg Ala Ala Ser Pro Ile Ile Thr				
58	63	68	73	
ttg gtg gcc ctt gat gaa gcc ctt gac aac tac acc atc aca ttc ctc				473
Leu Val Ala Leu Asp Glu Ala Leu Asp Asn Tyr Thr Ile Thr Phe Leu				
74	79	84	89	
atc cgc ggt gtg gcc atc ggc cag acc agt cta act gca agt gtg acc				521
Ile Arg Gly Val Ala Ile Gly Gln Thr Ser Leu Thr Ala Ser Val Thr				
90	95	100	105	
aat aaa gct gga cag aga atc aac tca gcc cca caa cag att gaa gtc				569
Asn Lys Ala Gly Gln Arg Ile Asn Ser Ala Pro Gln Gln Ile Glu Val				
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Phe Pro Pro Phe Arg Leu Met Pro Arg Lys Val Thr Leu Leu Ile Gly				
122	127	132	137	
gcc acg atg cag gtc acc tcc gag ggc ggc ccc cag cct cag tcc aac				665
Ala Thr Met Gln Val Thr Ser Glu Gly Gly Pro Gln Pro Gln Ser Asn				
138	143	148	153	
atc ctt ttc tcc atc agc aat gag agc gtt gcg ctg gtg agc gct gct				713
Ile Leu Phe Ser Ile Ser Asn Glu Ser Val Ala Leu Val Ser Ala Ala				
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ggg ctg gta cag ggc ctc gcc atc ggg aac ggc act gtg tct ggg ctc				761
Gly Leu Val Gln Gly Leu Ala Ile Gly Asn Gly Thr Val Ser Gly Leu				
170	175	180	185	
gtg cag gca gtg gat gca gag acc ggc aag gtg gtc atc atc tct cag				809
Val Gln Ala Val Asp Ala Glu Thr Gly Lys Val Val Ile Ile Ser Gln				
186	191	196	201	
gac ctc gtg cag gtg gag gtg ctg ctg cta agg gcc gtg agg atc cgc				857
Asp Leu Val Gln Val Glu Val Leu Leu Leu Arg Ala Val Arg Ile Arg				
202	207	212	217	
gcc ccc atc atg cgg atg agg acg ggc acc cag atg ccc atc tat gtc				905
Ala Pro Ile Met Arg Met Arg Thr Gly Thr Gln Met Pro Ile Tyr Val				
218	223	228	233	
acc ggc atc acc aac cac cag aac cct ttc tcc ttt ggc aat gcc gtg				953
Thr Gly Ile Thr Asn His Gln Asn Pro Phe Ser Phe Gly Asn Ala Val				
234	239	244	249	

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Pro Gly Leu Thr Phe His Trp Ser Val Thr Lys Arg Asp Val Leu Asp	
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Leu Arg Gly Arg His His Glu Ala Ser Ile Arg Leu Pro Ser Gln Tyr	
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Arg Ala Val Val Lys Ala Val Asp Pro Thr Ser Gly Gln Leu Tyr Gly	
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Leu Gln Leu Leu Asn Pro Glu Ile Glu Ala Glu Gln Ile Leu Met Ser	
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Pro Asn Ser Tyr Ile Lys Leu Gln Thr Asn Arg Asp Gly Ala Ala Ser	
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Leu Ser Tyr Arg Val Leu Asp Gly Pro Glu Lys Val Pro Val Val His	
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Val Asp Glu Lys Gly Phe Leu Ala Ser Gly Ser Met Ile Gly Thr Ser	
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Thr Ile Glu Val Ile Ala Gln Glu Pro Phe Gly Ala Asn Gln Thr Ile	
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att gtt gct gta aag gta tcc cct gtt tcc tac ctg agg gtt tcc atg	1481
Ile Val Ala Val Lys Val Ser Pro Val Ser Tyr Leu Arg Val Ser Met	
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Ser Pro Val Leu His Thr Gln Asn Lys Glu Ala Leu Val Ala Val Pro	
426 431 436 441	
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Leu Gly Met Thr Val Thr Phe Thr Val His Phe His Asp Asn Ser Gly	
442 447 452 457	
gat gtc ttc cat gct cac agt tcg gtc ctc aac ttt gcc act aac aga	1625
Asp Val Phe His Ala His Ser Ser Val Leu Asn Phe Ala Thr Asn Arg	
458 463 468 473	

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Asp Asp Phe Val Gln Ile Gly Lys Gly Pro Thr Asn Asn Thr Cys Val	
474 479 484 489	
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Val Arg Thr Val Ser Val Gly Leu Thr Leu Leu Arg Val Trp Asp Ala	
490 495 500 505	
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Glu His Pro Gly Leu Ser Asp Phe Met Pro Leu Pro Val Leu Gln Ala	
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Ile Ser Pro Glu Leu Ser Gly Ala Met Val Val Gly Asp Val Leu Cys	
522 527 532 537	
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Leu Ala Thr Val Leu Thr Ser Leu Glu Gly Leu Ser Gly Thr Trp Ser	
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Ser Ser Ala Asn Ser Ile Leu His Ile Asp Pro Lys Thr Gly Val Ala	
554 559 564 569	
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Val Ala Arg Ala Val Gly Ser Val Thr Val Tyr Tyr Glu Val Ala Gly	
570 575 580 585	
cac ctg agg acc tac aag gag gtg gtg gtc agc gtc cct cag agg atc	2009
His Leu Arg Thr Tyr Lys Glu Val Val Val Ser Val Pro Gln Arg Ile	
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atg gcc cgt cac ctc cac ccc atc cag acc agc ttc cag gag gct aca	2057
Met Ala Arg His Leu His Pro Ile Gln Thr Ser Phe Gln Glu Ala Thr	
602 607 612 617	
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Ala Ser Lys Val Ile Val Ala Val Gly Asp Arg Ser Ser Asn Leu Arg	
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Gly Glu Cys Thr Pro Thr Gln Arg Glu Val Ile Gln Ala Leu His Pro	
634 639 644 649	
gag acc ctc atc agc tgc cag tcc cag ttc aag ccg gcc gtc ttt gat	2201
Glu Thr Leu Ile Ser Cys Gln Ser Gln Phe Lys Pro Ala Val Phe Asp	
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Phe Pro Ser Gln Asp Val Phe Thr Val Glu Pro Gln Phe Asp Thr Ala	
666 671 676 681	
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Leu Gly Gln Tyr Phe Cys Ser Ile Thr Met His Arg Leu Thr Asp Lys	
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Pro	Phe	Ser	Pro	Gly	Leu	Phe	Ala	Asp	Gln	Ala	Glu	Ile	Leu	Leu	Ser		
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778					783					788					793		
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Leu	Thr	Phe	Ser	Ser	Pro	Val	Thr	Asn	Gln	Ala	Ile	Ala	Ile	Pro	Val		
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Thr	Val	Ala	Phe	Val	Met	Asp	Arg	Arg	Gly	Pro	Gly	Pro	Tyr	Gly	Ala		
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agc	ctc	ttc	cag	cac	ttc	ctg	gat	tcc	tac	cag	gtc	atg	ttc	ttc	acg	2777	
Ser	Leu	Phe	Gln	His	Phe	Leu	Asp	Ser	Tyr	Gln	Val	Met	Phe	Phe	Thr		
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ctc	ttc	gcc	ctg	ttg	gct	ggg	aca	gcg	gtc	atg	atc	ata	gcc	tac	cac	2825	
Leu	Phe	Ala	Leu	Leu	Ala	Gly	Thr	Ala	Val	Met	Ile	Ile	Ala	Tyr	His		
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Thr	Val	Cys	Thr	Pro	Arg	Asp	Leu	Ala	Val	Pro	Ala	Ala	Leu	Thr	Pro		
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Arg	Ala	Ser	Pro	Gly	His	Ser	Pro	His	Tyr	Phe	Ala	Ala	Ser	Ser	Pro		
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Thr	Ser	Pro	Asn	Ala	Leu	Pro	Pro	Ala	Arg	Lys	Ala	Ser	Pro	Pro	Ser		
906					911					916					921		
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Gly	Leu	Trp	Ser	Pro	Ala	Tyr	Ala	Ser	His	*							

922

927

932

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 <222> (986)..(1426)

<400> 862

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Met Val Ile Thr Ile Tyr Tyr Asp Val	
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Lys Val Arg Phe Ile Val Arg Gly Cys Gly Gln Tyr Ile Ser Tyr Arg	
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Cys Gln Glu Lys Arg Asn Thr Tyr Phe Ala Glu Tyr Trp Tyr Gln Ala	
26 31 36 41	
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Gln Cys Cys Gln Tyr Asp Tyr Cys Asn Ser Trp Ser Ser Pro Gln Leu	
42 47 52 57	
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Gln	Ser	Ser	Leu	Pro	Glu	Pro	His	Asp	Arg	Pro	Leu	Ala	Leu	Pro	Leu	
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Ser	Asp	Ser	Gln	Ile	Gln	Trp	Phe	Tyr	Gln	Ala	Leu	Asn	Leu	Ser	Leu	
74					79					84					89	
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Pro	Leu	Pro	Asn	Phe	His	Ala	Gly	Thr	Glu	Pro	Asp	Gly	Leu	Asp	Pro	
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atg	gtc	aca	ctg	tcc	ctg	aac	ctg	ggc	ttg	tct	ttt	gct	gag	ctg	cgc	1348
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Arg	Met	Tyr	Leu	Phe	Leu	Asn	Ser	Ser	Gly	Leu	Leu	Val	Leu	Pro	Gln	
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Ala	Gly	Leu	Leu	Thr	Pro	His	Pro	Ser	*							
138					143											
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Arg	Arg	Ser	Leu	Glu	Arg	Ala	Arg	Thr	Glu	Asp	Tyr	Leu	Lys	Arg	Lys	
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att	cgt	tcc	cgg	ccg	gag	aga	tcg	gag	ctg	gtc	agg	atg	cac	att	ttg	145
Ile	Arg	Ser	Arg	Pro	Glu	Arg	Ser	Glu	Leu	Val	Arg	Met	His	Ile	Leu	
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Glu	Glu	Thr	Ser	Ala	Glu	Pro	Ser	Leu	Gln	Ala	Lys	Gln	Leu	Lys	Leu	
46					51					56					61	
aag	aga	gcc	aga	cta	gcc	gat	gac	ctc	aat	gag	aag	att	gca	cag	agg	241
Lys	Arg	Ala	Arg	Leu	Ala	Asp	Asp	Leu	Asn	Glu	Lys	Ile	Ala	Gln	Arg	
62					67					72					77	
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Pro	Gly	Pro	Met	Glu	Leu	Val	Glu	Lys	Asn	Ile	Leu	Pro	Val	Glu	Ser	
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agc	ctg	aag	gaa	gcc	atc	att	gtg	ggc	cag	gtg	aac	tat	ccc	aaa	gta	337
Ser	Leu	Lys	Glu	Ala	Ile	Ile	Val	Gly	Gln	Val	Asn	Tyr	Pro	Lys	Val	
94					99					104					109	
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Ala	Asp	Ser	Ser	Ser	Phe	Asp	Glu	Asp	Ser	Ser	Asp	Ala	Leu	Ser	Pro	
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Thr	Gln	Val	Val	Ser	Gln	Leu	Pro	Met	Gly	Arg	Asp	Ser	Arg	Glu	Met	
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174					179					184					189	
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Pro	Ser	Leu	Thr	Asn	Gly	Thr	Thr	Ile	Pro	Thr	Ala	Lys	Ser	Thr	Pro	
190					195					200					205	
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Thr	Leu	Ile	Lys	Gln	Ser	Gln	Pro	Lys	Ser	Ala	Ser	Glu	Lys	Ser	Gln	
206					211					216					221	
cgc	agc	aag	aag	gcc	aag	gag	ctg	aag	cca	aag	gtg	aag	aag	ctc	aag	721
Arg	Ser	Lys	Lys	Ala	Lys	Glu	Leu	Lys	Pro	Lys	Val	Lys	Lys	Leu	Lys	
222					227					232					237	
tac	cac	cag	tac	atc	ccc	ccg	gac	cag	aag	cag	gac	agg	ggg	gca	ccc	769
Tyr	His	Gln	Tyr	Ile	Pro	Pro	Asp	Gln	Lys	Gln	Asp	Arg	Gly	Ala	Pro	

238	243	248	253	
ccc atg gac tca tcc tac gcc aag atc ctg cag cag cag cag ctc ttc				817
Pro Met Asp Ser Ser Tyr Ala Lys Ile Leu Gln Gln Gln Gln Leu Phe				
254	259	264	269	
ctc cag ctg cag atc ctc aac cag cag cag cag cag cac cac aac tac				865
Leu Gln Leu Gln Ile Leu Asn Gln Gln Gln Gln Gln His His Asn Tyr				
270	275	280	285	
cag gcc atc ctg cct gcc ccg cca aag tca gca ggc gag gcc ctg gga				913
Gln Ala Ile Leu Pro Ala Pro Pro Lys Ser Ala Gly Glu Ala Leu Gly				
286	291	296	301	
agc agc ggg acc ccc cca gta cgc agc ctc tcc act acc aat agc agc				961
Ser Ser Gly Thr Pro Pro Val Arg Ser Leu Ser Thr Thr Asn Ser Ser				
302	307	312	317	
tcc agc tcg ggc gcc cct ggg ccc tgt ggg ctg gca cgt cag aac agc				1009
Ser Ser Ser Gly Ala Pro Gly Pro Cys Gly Leu Ala Arg Gln Asn Ser				
318	323	328	333	
acc tca ctg act ggc aag ccg gga gcc ctg ccg gcc aac ctg gac gac				1057
Thr Ser Leu Thr Gly Lys Pro Gly Ala Leu Pro Ala Asn Leu Asp Asp				
334	339	344	349	
atg aag gtg gca gag ctg aag cag gag ctg aag ttg cga tca ctg cct				1105
Met Lys Val Ala Glu Leu Lys Gln Glu Leu Lys Leu Arg Ser Leu Pro				
350	355	360	365	
gtc tcg ggc acc aaa act gag ctg att gag cgc ctt cga gcc tat caa				1153
Val Ser Gly Thr Lys Thr Glu Leu Ile Glu Arg Leu Arg Ala Tyr Gln				
366	371	376	381	
gac caa atc agc cct gtg cca gga gcc ccc aag gcc cct gcc gcc acc				1201
Asp Gln Ile Ser Pro Val Pro Gly Ala Pro Lys Ala Pro Ala Ala Thr				
382	387	392	397	
tct atc ctg cac aag gct ggc gag gtg gtg gta gcc ttc cca gcg gcc				1249
Ser Ile Leu His Lys Ala Gly Glu Val Val Val Ala Phe Pro Ala Ala				
398	403	408	413	
cgg ctg agc acg ggg cca gcc ctg gtg gca gca ggc ctg gct cca gct				1297
Arg Leu Ser Thr Gly Pro Ala Leu Val Ala Ala Gly Leu Ala Pro Ala				
414	419	424	429	
gag gtg gtg gtg gcc acg gtg gcc agc agt ggg gtg gtg aag ttt ggc				1345
Glu Val Val Val Ala Thr Val Ala Ser Ser Gly Val Val Lys Phe Gly				
430	435	440	445	
agc acg ggc tcc acg ccc ccc gtg tct ccc acc ccc tcg gag cgc tca				1393
Ser Thr Gly Ser Thr Pro Pro Val Ser Pro Thr Pro Ser Glu Arg Ser				
446	451	456	461	
ctg ctc agc acg ggc gat gaa aac tcc acc ccc ggg gac acc ttt ggt				1441
Leu Leu Ser Thr Gly Asp Glu Asn Ser Thr Pro Gly Asp Thr Phe Gly				
462	467	472	477	

gag atg gtg aca tca cct ctg acg cag ctg acc ctg cag gcc tcg cca	1489
Glu Met Val Thr Ser Pro Leu Thr Gln Leu Thr Leu Gln Ala Ser Pro	
478 483 488 493	
ctg cag atc ctc gtg aag gag gag ggc ccc cgg gcc ggg tcc tgt tgc	1537
Leu Gln Ile Leu Val Lys Glu Glu Gly Pro Arg Ala Gly Ser Cys Cys	
494 499 504 509	
ctg agc cct ggg ggg cgg gcg gag cta gag ggg cgc gac aag gac cag	1585
Leu Ser Pro Gly Gly Arg Ala Glu Leu Glu Gly Arg Asp Lys Asp Gln	
510 515 520 525	
atg ctg cag gag aaa gac aag cag atc gag gcg ctg acg cgc atg ctc	1633
Met Leu Gln Glu Lys Asp Lys Gln Ile Glu Ala Leu Thr Arg Met Leu	
526 531 536 541	
cgg cag aag cag cag ctg gtg gag cgg ctc aag ctg cag ctg gag cag	1681
Arg Gln Lys Gln Gln Leu Val Glu Arg Leu Lys Leu Gln Leu Glu Gln	
542 547 552 557	
gag aag cga gcc cag cag ccc gcc ccc gcc ccc gcc ccc ctc ggc acc	1729
Glu Lys Arg Ala Gln Gln Pro Ala Pro Ala Pro Ala Pro Leu Gly Thr	
558 563 568 573	
ccc gtg aag cag gag aac agc ttc tcc agc tgc cag ctg agc cag cag	1777
Pro Val Lys Gln Glu Asn Ser Phe Ser Ser Cys Gln Leu Ser Gln Gln	
574 579 584 589	
ccc ctg ggc ccc gct cac cca ttc aac ccc agc ctg gcg gcc cca gcc	1825
Pro Leu Gly Pro Ala His Pro Phe Asn Pro Ser Leu Ala Ala Pro Ala	
590 595 600 605	
acc aac cac ata gac cct tgt gct gtg gcc ccg ggg ccc ccg tcc gtg	1873
Thr Asn His Ile Asp Pro Cys Ala Val Ala Pro Gly Pro Pro Ser Val	
606 611 616 621	
gtg gtg aag cag gaa gcc ttg cag cct gag ccc gag ccg gtc ccc gcc	1921
Val Val Lys Gln Glu Ala Leu Gln Pro Glu Pro Glu Pro Val Pro Ala	
622 627 632 637	
ccc cag ttg ctt ctg ggg cct cag ggc ccc ggc ctc atc aag ggg gtt	1969
Pro Gln Leu Leu Leu Gly Pro Gln Gly Pro Gly Leu Ile Lys Gly Val	
638 643 648 653	
gca cct ccc acc ctc atc acc gac tcc aca ggg acc cac ctt gtc ctc	2017
Ala Pro Pro Thr Leu Ile Thr Asp Ser Thr Gly Thr His Leu Val Leu	
654 659 664 669	
acc gtg acc aat aag aat gca gac agc cct ggc ctg tcc agt ggg agc	2065
Thr Val Thr Asn Lys Asn Ala Asp Ser Pro Gly Leu Ser Ser Gly Ser	
670 675 680 685	
ccc cag cag ccc tcg tcc cag cct ggc tct cca gcg cct gcc ccc tct	2113
Pro Gln Gln Pro Ser Ser Gln Pro Gly Ser Pro Ala Pro Ala Pro Ser	
686 691 696 701	

His Trp Asp Ser Cys Leu *
926 931

tgggagccag ggtactccaa tgcgtggctc tctgctga ttcggcctct ccacatggtt 2898
gtgagtcttg acaatcacag cccctgcttt tcccttccc tgggaggcta gaacagagaa 2958
gcccttactc ctggttcagt gccacgcagg gcagaggaga gcagctgtca agaagcagcc 3018
ctggctctca cgtggtgggt ttggacacac ggtcagggtc agggccattt cagcttgacc 3078
tccttttttg aggtcagggg gcaactgtctg tctggctaca atttggttaa ggtaggtgaa 3138
gcctggccag gcgggaggct tctcttctga cccagggtg agacaggta aggggtgaat 3198
ctccttctt tctctccctg ctttgcgtg aaggagaaa ttagcctggg cctctacccc 3258
ctattccctg tgtctgccaa ccccaggatc ccagggtcc ctgccatttt agtgtcttg 3318
tgtagtgtaa ccatttagtg gttggtggga acaattttat gtacagggtg atatacctct 3378
atattatata tcgacatata tatatatttt tggggggggg cggacaggag atgggtgcaa 3438
ctccctccca tctactctc acagaagggc ctggatgcaa ggttaccctt gagctgtgtg 3498
ccacagtctg gttgccagtc tggcatgcag ctaccaggc ccacccatca cgtgtgattt 3558
acatgtaggt accctgccag ggcctatgcc 3588

<210> 864
<211> 1795
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (164) .. (1429)

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tgcccgggtg agatttcccg gcgggtcccg gcctctgcgt gcacgcgcct gcgtgctcgc 120
gctcgcggtt ctggcgtgc tggaaaggaa taatgctgac agc atg tct gca cat 175
Met Ser Ala His
1
tcc atg ctc tgt gaa cga atc gcc ata gcc aag gaa ctg atc aag aga 223
Ser Met Leu Cys Glu Arg Ile Ala Ile Ala Lys Glu Leu Ile Lys Arg
5 10 15 20
gca gaa tca ctt tct aga tca aga aaa ggt ggc ata gaa ggt ggt gca 271
Ala Glu Ser Leu Ser Arg Ser Arg Lys Gly Gly Ile Glu Gly Gly Ala
21 26 31 36

aag ctg tgc agc aaa ttg aag gca gaa tta aaa ttc ttg cag aaa gta	319
Lys Leu Cys Ser Lys Leu Lys Ala Glu Leu Lys Phe Leu Gln Lys Val	
37 42 47 52	
gaa gct ggg aaa gta gct att aaa gag tct cat tta cag agc act aac	367
Glu Ala Gly Lys Val Ala Ile Lys Glu Ser His Leu Gln Ser Thr Asn	
53 58 63 68	
cta aca cac ctg aga gcc att gtg gaa tca gca gaa aac ctg gaa gaa	415
Leu Thr His Leu Arg Ala Ile Val Glu Ser Ala Glu Asn Leu Glu Glu	
69 74 79 84	
gtt gtt agt gtt ctt cat gtc ttt ggt tat aca gat acc tta gga gaa	463
Val Val Ser Val Leu His Val Phe Gly Tyr Thr Asp Thr Leu Gly Glu	
85 90 95 100	
aag caa acc ctt gtg gta gat gta gtt gca aat ggt ggt cat act tgg	511
Lys Gln Thr Leu Val Val Asp Val Val Ala Asn Gly Gly His Thr Trp	
101 106 111 116	
gtg aaa gcc att ggc cgg aag gct gaa gct ctt cat aac atc tgg ctg	559
Val Lys Ala Ile Gly Arg Lys Ala Glu Ala Leu His Asn Ile Trp Leu	
117 122 127 132	
ggc agg ggc caa tat ggt gac aaa agc atc att gag cag gct gaa gac	607
Gly Arg Gly Gln Tyr Gly Asp Lys Ser Ile Ile Glu Gln Ala Glu Asp	
133 138 143 148	
ttc ctc cag gcc agt cac cag cag cca gtg cag tat agc aac cct cac	655
Phe Leu Gln Ala Ser His Gln Gln Pro Val Gln Tyr Ser Asn Pro His	
149 154 159 164	
atc atc ttt gca ttt tac aac agt gtc tcc agc ccc atg gca gag aag	703
Ile Ile Phe Ala Phe Tyr Asn Ser Val Ser Ser Pro Met Ala Glu Lys	
165 170 175 180	
ctg aaa gaa atg ggc ata tct gtg aga gga gac ata gta gca gtc aac	751
Leu Lys Glu Met Gly Ile Ser Val Arg Gly Asp Ile Val Ala Val Asn	
181 186 191 196	
gct ctg tta gat cac cct gaa gag ctt caa cca agt gag agt gaa tca	799
Ala Leu Leu Asp His Pro Glu Glu Leu Gln Pro Ser Glu Ser Glu Ser	
197 202 207 212	
gat gat gag ggc cct gaa ctt ttg cag gtg acc aga gtt gac cga gaa	847
Asp Asp Glu Gly Pro Glu Leu Leu Gln Val Thr Arg Val Asp Arg Glu	
213 218 223 228	
aat ata cta gca agt gtt gcg ttt cca aca gaa att aag gtc gat gtg	895
Asn Ile Leu Ala Ser Val Ala Phe Pro Thr Glu Ile Lys Val Asp Val	
229 234 239 244	
tgc aaa aga gta aat ctg gac att act act tta atc aca tat gta tct	943
Cys Lys Arg Val Asn Leu Asp Ile Thr Thr Leu Ile Thr Tyr Val Ser	
245 250 255 260	

gcc ctc agc tat gga ggc tgc cac ttt att ttc aaa gag aaa gtg ctc	991
Ala Leu Ser Tyr Gly Gly Cys His Phe Ile Phe Lys Glu Lys Val Leu	
261 266 271 276	
aca gaa caa gca gag caa gag agg aaa gag cag gtt cta cct cag ctg	1039
Thr Glu Gln Ala Glu Gln Glu Arg Lys Glu Gln Val Leu Pro Gln Leu	
277 282 287 292	
gag gcc ttt atg aag gac aag gag ttg ttt gct tgt gaa tct gct gtc	1087
Glu Ala Phe Met Lys Asp Lys Glu Leu Phe Ala Cys Glu Ser Ala Val	
293 298 303 308	
aag gac ttt cag tct att tta gat acc tta gga gga cct ggg gag aga	1135
Lys Asp Phe Gln Ser Ile Leu Asp Thr Leu Gly Gly Pro Gly Glu Arg	
309 314 319 324	
gag agg gcc act gtg tta att aag cga att aat gtg gta cca gac cag	1183
Glu Arg Ala Thr Val Leu Ile Lys Arg Ile Asn Val Val Pro Asp Gln	
325 330 335 340	
cct tct gag cgt gcc ttg aga cta gtg gcc agt tca aaa att aat agc	1231
Pro Ser Glu Arg Ala Leu Arg Leu Val Ala Ser Ser Lys Ile Asn Ser	
341 346 351 356	
cgc tca tta aca att ttt ggg acg gga gac acc cta aaa gcc atc aca	1279
Arg Ser Leu Thr Ile Phe Gly Thr Gly Asp Thr Leu Lys Ala Ile Thr	
357 362 367 372	
atg act gct aat agt ggt ttt gtc aga gct gca aac aac cag ggt gtt	1327
Met Thr Ala Asn Ser Gly Phe Val Arg Ala Ala Asn Asn Gln Gly Val	
373 378 383 388	
aaa ttt agt gtg ttt atc cat cag ccc aga gca ctt act gag agt aaa	1375
Lys Phe Ser Val Phe Ile His Gln Pro Arg Ala Leu Thr Glu Ser Lys	
389 394 399 404	
gag gct cta gcc acc ccc tta cca aaa gac tac aca act gac agt gaa	1423
Glu Ala Leu Ala Thr Pro Leu Pro Lys Asp Tyr Thr Thr Asp Ser Glu	
405 410 415 420	
cac taa agataccctt taaatatttt tgtggaagta agttatttat accaaaggct	1479
His *	
421	
gggtcttccc atctaaactg gtgggaaaaa aggtctatag taaaagtaaa actgagaact	1539
cttaaaccag tagagtttct ttgtctctca tctaaagtat ataacctccc aaagtagaaa	1599
aagcacaaga gagaagctta tctatcaaac tgtctgcatt agtgcaatta agaaccgaaa	1659
tacgtctata taaagctttc agctgtattg taatactttg attcgatagg gctacaactc	1719
ccctactgct aaccacattt catggaatat ggctacattg catcttgcac taaatatctg	1779
gagaaaaaaaa aaaaaa	1795

<210> 865
 <211> 769
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (239) .. (625)

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 atttttaggtt taaaaagcaa ccagattcat ctcagcagct tttgtagttt taaataagca 120
 aggagtttct ccagcgaaac ttcctcacac ctcttggtct tgggtctcttc agacactttc 180
 ctctctgttc tctggagatc ttgcagaaaa gagcctgcag tgtttccctt gctcagcc 238
 atg ctc ctg gag ctt atc cca ctg ctg ggg ata cat ttt gtc ctg aga 286
 Met Leu Leu Glu Leu Ile Pro Leu Leu Gly Ile His Phe Val Leu Arg
 1 5 10 15
 act gcc aga gcc cag tca gtg acc cag cct gac atc cac atc act gtc 334
 Thr Ala Arg Ala Gln Ser Val Thr Gln Pro Asp Ile His Ile Thr Val
 17 22 27 32
 tct gaa gga gcc tca ctg gag ttg aga tgt aac tat tcc tat ggg gca 382
 Ser Glu Gly Ala Ser Leu Glu Leu Arg Cys Asn Tyr Ser Tyr Gly Ala
 33 38 43 48
 aca cct tat ctc ttc tgg atg gaa aga act gtt gaa gaa gct ttt ata 430
 Thr Pro Tyr Leu Phe Trp Met Glu Arg Thr Val Glu Glu Ala Phe Ile
 49 54 59 64
 ctt ctt gtt tgc ttg aag cct tgg agg gta gca agt agt ctg gag aaa 478
 Leu Leu Val Cys Leu Lys Pro Trp Arg Val Ala Ser Ser Leu Glu Lys
 65 70 75 80
 aag gag aag gag gat gaa tct ttc cag ctg cta ctt ggc tca cgc tat 526
 Lys Glu Lys Glu Asp Glu Ser Phe Gln Leu Leu Leu Gly Ser Arg Tyr
 81 86 91 96
 aat gta tta aag gca cac tgt ctt cta cct ttg ata aga tgg cta act 574
 Asn Val Leu Lys Ala His Cys Leu Leu Pro Leu Ile Arg Trp Leu Thr
 97 102 107 112
 tca ggt gac tca ctg tta tca gct cag cca cat tgc cca cag gga ctg 622
 Ser Gly Asp Ser Leu Leu Ser Ala Gln Pro His Cys Pro Gln Gly Leu
 113 118 123 128
 tga tggg cactttatgc gaatcttaaa ggaggttctt gcagcatgag aggcttctcc 679
 *
 129
 agcgtccggc tctgcagtg cacccacacc aggttctctgc gctgtacagt ggccagcagt 739

gtcctccagc acttccattt ttgcgtggta

769

<210> 866
<211> 1024
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (519) .. (980)

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ttgtgctggac tggccggatc tgctgtcagt cagcgggaac agacttctcc ctctccatct 120
gggtcaactgc gggagaaaaa ttttcgagaa tttccagcag gcaaggcagt ggccgctttg 180
actgcttgct tcggagatcc gagacgacgg agaaggcact cttatttacc gaccaagaaa 240
gctcctcccc cgtcctccgt tagctaatta aaacattttt cagggacgta gccatccaga 300
gggatttgct tcctaaggag aagaacttgg aaactctgtt gaccttggct tttctagaaa 360
tagataaagc cttttcgagt catgcccgcc tgtctgctga tgcaactctt ctgacctctg 420
ggactactgc aacagtagcc ctattgagag atggtattga actggttgta gccagtgttg 480
gggacagccg ggctattttg tgtagaaaag gaaaaccc atg aag ctg acc att 533
Met Lys Leu Thr Ile
1
gac cat act cca gaa aga aaa gat gaa aaa gaa agg atc aag aaa tgt 581
Asp His Thr Pro Glu Arg Lys Asp Glu Lys Glu Arg Ile Lys Lys Cys
6 11 16 21
ggg ggt ttt gta gct tgg aat agt ttg ggg cag cct cac gta aat ggc 629
Gly Gly Phe Val Ala Trp Asn Ser Leu Gly Gln Pro His Val Asn Gly
22 27 32 37
agg ctt gca atg aca aga agt att gga gat ttg gac ctt aag acc agt 677
Arg Leu Ala Met Thr Arg Ser Ile Gly Asp Leu Asp Leu Lys Thr Ser
38 43 48 53
ggg gtc ata gca gaa cct gaa act aag agg att aag tta cat cat gct 725
Gly Val Ile Ala Glu Pro Glu Thr Lys Arg Ile Lys Leu His His Ala
54 59 64 69
gat gac agc ttc ctg gtc ctc acc aca gat gga att aac ttc atg gtg 773
Asp Asp Ser Phe Leu Val Leu Thr Thr Asp Gly Ile Asn Phe Met Val
70 75 80 85
aat agt caa gag att tgt gac ttt gtc aat cag tgc cat gat ccc aac 821
Asn Ser Gln Glu Ile Cys Asp Phe Val Asn Gln Cys His Asp Pro Asn

86	91	96	101	
gaa gca gcc cat gcg gtg act gaa cag gca ata cag tac ggt act gag				869
Glu Ala Ala His Ala Val Thr Glu Gln Ala Ile Gln Tyr Gly Thr Glu				
102	107	112	117	
gat aac agt act gca gta gta gtg cct ttt ggt gcc tgg gga aaa tat				917
Asp Asn Ser Thr Ala Val Val Val Pro Phe Gly Ala Trp Gly Lys Tyr				
118	123	128	133	
aag aac tct gaa atc aac ttc tca ttc agc aga agc ttt gcc tcc agt				965
Lys Asn Ser Glu Ile Asn Phe Ser Phe Ser Arg Ser Phe Ala Ser Ser				
134	139	144	149	
gga cga tgg gcc tga ttaccagctg ggacttagag tttctgtgca acagtttttc				1020
Gly Arg Trp Ala *				
150				
actg				1024

<210> 867
 <211> 1326
 <212> DNA
 <213> Homo sapiens

 <220>
 <221> CDS
 <222> (307) .. (1068)

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agcaggacct gggttccctcc ctccctctctc cgcccacct cgtcggcgctc tgccccgcgc	120
ccgccatagc gacggcaacg ggcgctgcgg agtgctccga gccgtgaggg cggggccggc	180
gcgatgcccc gcccttcga tagctcatct ttgcgcgtcg cagtcgcgcg gagcccggct	240
tccgacgtgc agcctggcag tgcagtgagc tgtctggcct tttgtccttg atccttggtt	300
aaggaa atg acc aac cag tac ggt att ctc ttc aaa caa gag caa gcc	348
Met Thr Asn Gln Tyr Gly Ile Leu Phe Lys Gln Glu Gln Ala	
1 5 10	
cat gat gat gcc att tgg tca gtt gct tgg ggg aca aac aag aag gaa	396
His Asp Asp Ala Ile Trp Ser Val Ala Trp Gly Thr Asn Lys Lys Glu	
15 20 25 30	
aac tct gag aca gtg gtc aca ggc tcc cta gat gac ctg gtg aag gtc	444
Asn Ser Glu Thr Val Val Thr Gly Ser Leu Asp Asp Leu Val Lys Val	
31 36 41 46	
/	
tgg aaa tgg cgt gat gag agg ctg gac cta cag tgg agt ctg gag gga	492
Trp Lys Trp Arg Asp Glu Arg Leu Asp Leu Gln Trp Ser Leu Glu Gly	

47	52	57	62	
cat cag ctg gga gtg gtg tct gtg gac atc agc cac acc ctg ccc att				540
His Gln Leu Gly Val Val Ser Val Asp Ile Ser His Thr Leu Pro Ile				
63	68	73	78	
gct gca tcc agc tct ctt gat gct cat att cgt ctt tgg gac ttg gaa				588
Ala Ala Ser Ser Ser Leu Asp Ala His Ile Arg Leu Trp Asp Leu Glu				
79	84	89	94	
aat ggc aaa cag ata aag tcc ata gat gca gga cct gtg gat gcc tgg				636
Asn Gly Lys Gln Ile Lys Ser Ile Asp Ala Gly Pro Val Asp Ala Trp				
95	100	105	110	
act ttg gcc ttt tct cct gat tcc cag tat ctg gcc aca gga act cat				684
Thr Leu Ala Phe Ser Pro Asp Ser Gln Tyr Leu Ala Thr Gly Thr His				
111	116	121	126	
gtc ggg aaa gtg aac att ttt ggt gtg gaa agt ggg aaa aag gaa tat				732
Val Gly Lys Val Asn Ile Phe Gly Val Glu Ser Gly Lys Lys Glu Tyr				
127	132	137	142	
tct ttg gac acg aga gga aaa ttc att ttt agt att gca tat agt cct				780
Ser Leu Asp Thr Arg Gly Lys Phe Ile Phe Ser Ile Ala Tyr Ser Pro				
143	148	153	158	
gat ggg aaa tac cta gcc agt gga gcc ata gat gga atc atc aat att				828
Asp Gly Lys Tyr Leu Ala Ser Gly Ala Ile Asp Gly Ile Ile Asn Ile				
159	164	169	174	
ttt gat att gca act gga aaa ctt ctg cat acc ctg gaa ggc cat gcc				876
Phe Asp Ile Ala Thr Gly Lys Leu Leu His Thr Leu Glu Gly His Ala				
175	180	185	190	
ctg ccc att cgc tcc ttg acc ttt tcc ccg gac tcc cag ctc ctt gtc				924
Leu Pro Ile Arg Ser Leu Thr Phe Ser Pro Asp Ser Gln Leu Leu Val				
191	196	201	206	
act gct tca gat gat ggc tac atc aag atc tat gat gtg tgt cgc ttc				972
Thr Ala Ser Asp Asp Gly Tyr Ile Lys Ile Tyr Asp Val Cys Arg Phe				
207	212	217	222	
ttg ctg ctc tca agc cct act ccc cat gct tct gct tct agc ttg ctg				1020
Leu Leu Leu Ser Ser Pro Thr Pro His Ala Ser Ala Ser Ser Leu Leu				
223	228	233	238	
gga gct ggg aaa ctg acc aag cat gga aaa cta cag caa tgc tca taa				1068
Gly Ala Gly Lys Leu Thr Lys His Gly Lys Leu Gln Gln Cys Ser *				
239	244	249	254	
caggctaataa ggctctgggg aagaaggcat ttcaacagca gaaaagagga agaagaggga				1128
gaagagaaaa tggagaaaca agaaataagc caacacaaaa gaggggtgaa gaaaagagag				1188
ggtgcaaaaag agaacaaagt aaaaacaaaa acaaaacaaa aaggacaaac aaatccccaa				1248
agaactctcc aacggcaggt ttcttgatg ctccaccctt cttataata aagaaggaaa				1308

tggaaaaaaa aaaaaaaa

1326

<210> 868
<211> 1292
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (370)..(1089)

<400> 868
gcctgcacgt accggtccgg aattcccggg tcgaccacg cgtccgctgg gagtgagagc 60
tcctgggact ttctgtttcc agggcagggg ctgggatgat ggcgcgggag aggctgtgtc 120
ctcgcgtgtc acccaccagc cctcgagcag aggcaggctt ggagtctgca gccaccctgg 180
gaatgtctgt gcttctctgt ggagctgaca tgatggtgaa ataggttcaa tcctccacct 240
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Met His Thr His Gln Thr Val Asp Phe Val Arg Ser Lys
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gcc gtg gac ctg ctg gat ggg ctg gtg gat gag tcg gac ccg gac gta 504
Ala Val Asp Leu Leu Asp Gly Leu Val Asp Glu Ser Asp Pro Asp Val
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Asp Phe Pro Asn Ser Phe His Ala Phe Gln Thr Ala Glu Gly Ile Arg
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Val Gly Asp Thr Phe Pro Val Gly Cys Arg Pro Gln Ala Ser Val Val
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Tyr Ser Thr Glu Leu	Gly Met Tyr Gln Pro	His Cys Gly Leu Asp Arg	
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gtc ctc atg tcc tgg	ggc cat gat gag tac	atg tac cag gtg atg aag	840
Val Leu Met Ser Trp	Gly His Asp Glu Tyr	Met Tyr Gln Val Met Lys	
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Ser Gln Gln Asp Leu	Ala Met Leu Pro Trp	Val Arg Glu Phe Asn Lys	
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Ser Trp *			
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Leu Arg Gln Gly Asn Arg Gln Ser Ser Ala Ser Gly Cys Ser Val Ala	
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Ile Val Thr Ala Pro Ile Thr Ala Val Val Val Met Ala Gly Leu Ser	
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Gly Ala Gln Ile Pro Asp Gly Glu Phe Thr Ala Val Val Tyr Arg Leu	
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atc cgc aat gca cgc tac gcc gag gcg gtg cag ctg ctg ggc gga gaa	288
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ctg cag cgg agc cct agg agc cgc gcc ggc ctg tgc ctg cta ggc tac	336
Leu Gln Arg Ser Pro Arg Ser Arg Ala Gly Leu Ser Leu Leu Gly Tyr	
97 102 107 112	
tgc tac tac cgc ctg cag gag ttc gcg ctg gcg gcc gag tgc tat gag	384
Cys Tyr Tyr Arg Leu Gln Glu Phe Ala Leu Ala Ala Glu Cys Tyr Glu	
113 118 123 128	
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Gln Leu Gly Gln Leu His Pro Glu Leu Glu Gln Tyr Arg Leu Tyr Gln	
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gcc cag gcc ctg tac aag gcc tgc ctt tat gcg gag gcc acc cgg gtc	480
Ala Gln Ala Leu Tyr Lys Ala Cys Leu Tyr Ala Glu Ala Thr Arg Val	
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Ala Phe Leu Leu Leu Asp Asn Pro Ala Tyr His Ser Arg Val Leu Arg	
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Tyr Tyr Ser Ser Arg Gln Tyr Ala Ser Ala Leu Lys His Ile Ala Glu	
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Ile Ile Glu Arg Gly Ile Arg Gln His Pro Glu Leu Gly Val Gly Met	
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Thr Thr Glu Gly Ile Asp Val Arg Ser Val Gly Asn Thr Leu Val Leu	
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His Gln Thr Ala Leu Val Glu Ala Phe Asn Leu Lys Ala Ala Ile Glu	
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Pro Pro Arg Ala Glu Glu Glu Leu Asp Pro Val Thr Leu His Asn Gln	
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Leu Tyr Asp Phe Leu Asp Ala Val Ile Thr Cys Gln Thr Ala Pro Glu	
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Glu Ala Phe Ile Lys Leu Asp Gly Leu Ala Gly Met Leu Thr Glu Gln	
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449 454 459 464	
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Lys Tyr Ile Pro Val Leu Met Ala Gln Ala Lys Ile Tyr Trp Asn Leu	
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Glu Asn Tyr Pro Met Val Glu Lys Ile Phe Arg Lys Ser Val Glu Phe	
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Cys Asn Asp His Asp Val Trp Lys Leu Asn Val Ala His Val Leu Phe	
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Val Lys Lys His Tyr Asp Asn Ile Leu Asn Val Ser Ala Ile Val Leu	
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577 582 587 592	
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Ile Gly Thr Leu Tyr Cys Ala Lys Gly Asn Tyr Asp Phe Gly Ile Ser	
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Gln Phe Leu Glu His Cys Glu Leu His Gly Arg Asn Ile Pro Ala Val	
673 678 683 688	
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Leu His Arg Val Gly	Gly Arg Ser Arg Arg	Val Gln Ala His Gly Pro		
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Gly Arg Gly Gly Ala	Ala Val Gly Arg Ala	Gln Glu Gln Ala Gln His		
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gaa cta cga caa gct	gag ccg cgc cct gct	atc tac tac gac aag aac		2304
Glu Leu Arg Gln Ala	Glu Pro Arg Pro Ala	Ile Tyr Tyr Asp Lys Asn		
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Ile Met Ser Lys Val	His Gly Lys Arg Tyr	Ala Tyr Arg Phe Asp Phe		
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Ser Leu Glu Val Ala	Pro Thr Ala Ser Pro	Thr Gly Arg Ala Gly Ala		
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aagtggatac ttgcagcacc tgaactcact gcaatagcaa taggaggtgg ct atg	415
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Thr Arg Ile Thr Gly Ser Met Gly Pro Gln Gly Ala Leu Gly Pro Pro	
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Gly Val Pro Gly Ala Lys Gly Glu Arg Gly Glu Arg Gly Asp Leu Gln	
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Ile Gln Ser His Met Ala Arg Tyr Thr Ala Ile Leu Asn Gln Ile Pro	
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Gly Arg Pro Gly Ser Pro Gly Ala Pro Gly Glu Gln Gly Pro Pro Gly	
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Ser Glu Glu Ala Ala Arg Gly Arg Asp Leu Arg Gly Arg Gly Arg Gly	
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Pro Arg Phe Glu Gly Gly Arg Lys Pro Asp Ser Trp Asp Gly Asn Arg	
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Trp His Asp Gly Pro Gly Thr Ser Glu His Arg Glu Met Glu Ala Pro	
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Arg Gly Ser Asn Met Asn Ser Gly Pro Pro Arg Arg Gly Ala Ser Arg	
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Arg Gly Phe Leu Ser Lys Lys Thr Ala Glu Ala Ser Arg Trp His Glu
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Lys Trp Phe Ala Leu Tyr Gln Asn Val Leu Phe Tyr Phe Glu Gly Glu
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gcctctcctc aggggggtgtt gtgaccacagc ccctgcttca taagggtcaag gttggatggc    120
cagccgtgg   atg gca ggg ctg gag gct tgg ctt tca cag aac ttc tcc      168
             Met Ala Gly Leu Glu Ala Trp Leu Ser Gln Asn Phe Ser
             1             5             10

ctc cac caa cct cag agc cga gtc cgt gtg agg cgg gca agc atc tct      216
Leu His Gln Pro Gln Ser Arg Val Arg Val Arg Ala Ser Ile Ser
 14             19             24             29

gaa ccc agt gat acg gac ccg gag ccc cga act ctg aac ccc tct ccg      264
Glu Pro Ser Asp Thr Asp Pro Glu Pro Arg Thr Leu Asn Pro Ser Pro
 30             35             40             45

gct gga tgg ttc gtg cag cag cac ccg gag ctg gag ctc atg agc agc      312
Ala Gly Trp Phe Val Gln Gln His Pro Glu Leu Glu Leu Met Ser Ser
 46             51             56             61

ttc cgg gaa cgg ttc ggc cgc aac tgg ctg cag tac agg agt cac ctg      360
Phe Arg Glu Arg Phe Gly Arg Asn Trp Leu Gln Tyr Arg Ser His Leu
 62             67             72             77

gag ccc tcc gga aac cct ctg ccg gcc acc ccc act act tct gca ccc      408
Glu Pro Ser Gly Asn Pro Leu Pro Ala Thr Pro Thr Thr Ser Ala Pro
 78             83             88             93

agt gca cct cca gcc agc tcc cag ggc ccc gac act gca ccc aga cct      456
Ser Ala Pro Pro Ala Ser Ser Gln Gly Pro Asp Thr Ala Pro Arg Pro
 94             99             104            109

tca ccc ccg cag gag gaa gcc aga ggc ccc cag gag tca cca cag aaa      504
Ser Pro Pro Gln Glu Glu Ala Arg Gly Pro Gln Glu Ser Pro Gln Lys
110             115            120            125

atg tca gag gag gtc agg gcg gag cca cag gag gag gaa gag gag aag      552
Met Ser Glu Glu Val Arg Ala Glu Pro Gln Glu Glu Glu Glu Lys
126             131            136            141

gag ggg aag gag gag aag gag gag ggg gag atg gcg cca cac cgt gaa      600
Glu Gly Lys Glu Glu Lys Glu Glu Gly Glu Met Ala Pro His Arg Glu
142             147            152            157

gct cac ctg ggt gag tgg aaa cag aaa gag tgc cct tag aagtataata      649
Ala His Leu Gly Glu Trp Lys Gln Lys Glu Cys Pro *
158             163            168

ctggagagtg ccactcttat caacgcttta cgaatacccc ccgactgagg ggggaataca    709

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 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (260)..(610)

<400> 876

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gagctccgggg aggcaggggccc ggccccacgt cctctgcgca ccaccctgag ttggatcctc      180
tgtgcgccac ccctgagttg gatccagggc tagctgctgt tgacctcccc actcccacgc      240
tgccctcctg cctgcagcc atg acg ccc ctg ctc acc ctg atc ctg gtg gtc      292
          Met Thr Pro Leu Leu Thr Leu Ile Leu Val Val
              1              5

ctc atg ggc tta cct ctg gcc cag gcc ttg gac tgc cac gtg tgt gcc      340
Leu Met Gly Leu Pro Leu Ala Gln Ala Leu Asp Cys His Val Cys Ala
    12              17              22              27

tac aac gga gac aac tgc ttc aac ccc atg cgc tgc ccg gct atg gtt      388
Tyr Asn Gly Asp Asn Cys Phe Asn Pro Met Arg Cys Pro Ala Met Val
    28              33              38              43

gcc tac tgc atg acc acg cgc acc tac tac acc ccc acc agg atg aag      436
Ala Tyr Cys Met Thr Thr Arg Thr Tyr Tyr Thr Pro Thr Arg Met Lys
    44              49              54              59

gtc agt aag tcc tgc gtg ccc cgc tgc ttc gag act gtg tat gat ggc      484
Val Ser Lys Ser Cys Val Pro Arg Cys Phe Glu Thr Val Tyr Asp Gly
    60              65              70              75

tac tcc aag cac gcg tcc acc acc tcc tgc tgc cag tac gac ctc tgc      532
Tyr Ser Lys His Ala Ser Thr Thr Ser Cys Cys Gln Tyr Asp Leu Cys
    76              81              86              91

aac ggc acc ggc ctt gcc acc ccg gcc acc ctg gcc ctg gcc ccc atc      580
Asn Gly Thr Gly Leu Ala Thr Pro Ala Thr Leu Ala Leu Ala Pro Ile
    92              97              102              107

ctc ctg gcc acc ctt tgg ggt ctc ctc taa a gcccccgagg cagaccact      631
Leu Leu Ala Thr Leu Trp Gly Leu Leu *
    108              113

caagaacaaa gctctcgaga cacaatgtta caccgtggga ctcagctgac cctgcctcac      691

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cctccacact ccttgcgacc tcatgagcca tgcgcagggg ggttggtctg ttcaaataaa 751
 gggacgtggtt ttccacactg aaaaaaaaaa aa 783

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 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (360) .. (1742)

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 tccctgggga gacctatggg ccgaagccgt gtaaattgctg tttaagcaga ggcctcggct 180
 ccgcaactgc cactcctcct cgggggtgttg cacaagtctc gaggtcaccg gcgaccccc 240
 ctagcagcgc gcctggctct gggccccgcg aaggaggacg gagtttgtgt gttgcatact 300
 ttctaaggcg gcggtgcag cagcggctcc atccagcccg tcagctcctc ctgcaaggc 359
 atg gct ggc tac ctg agt gaa tcg gac ttt gtg atg gtg gag gag ggc 407
 Met Ala Gly Tyr Leu Ser Glu Ser Asp Phe Val Met Val Glu Glu Gly
 1 5 10 15
 ttc agt acc cga gac ctg ctg aag gaa ctc act ctg ggg gcc tca cag 455
 Phe Ser Thr Arg Asp Leu Leu Lys Glu Leu Thr Leu Gly Ala Ser Gln
 17 22 27 32
 gcc acc acg gac gag gta gct gcc ttc ttc gtg gct gac ctg ggt gcc 503
 Ala Thr Thr Asp Glu Val Ala Ala Phe Phe Val Ala Asp Leu Gly Ala
 33 38 43 48
 ata gtg agg aag cac ttt tgc ttt ctg aag tgc ctg cca cga gtc cgg 551
 Ile Val Arg Lys His Phe Cys Phe Leu Lys Cys Leu Pro Arg Val Arg
 49 54 59 64
 ccc ttt tat gct gtc aag tgc aac agc agc cca ggt gtg ctg aag gtt 599
 Pro Phe Tyr Ala Val Lys Cys Asn Ser Ser Pro Gly Val Leu Lys Val
 65 70 75 80
 ctg gcc cag ctg ggg ctg ggc ttt agc tgt gcc aac aag gca gag atg 647
 Leu Ala Gln Leu Gly Leu Gly Phe Ser Cys Ala Asn Lys Ala Glu Met
 81 86 91 96
 gag ttg gtc cag cat att gga atc cct gcc agt aag atc atc tgc gcc 695
 Glu Leu Val Gln His Ile Gly Ile Pro Ala Ser Lys Ile Ile Cys Ala
 97 102 107 112

aac ccc tgt aag caa att gca cag atc aaa tat gct gcc aag cat ggg Asn Pro Cys Lys Gln Ile Ala Gln Ile Lys Tyr Ala Ala Lys His Gly 113 118 123 128	743
atc cag ctg ctg agc ttt gac aat gag atg gag ctg gca aag gtg gta Ile Gln Leu Leu Ser Phe Asp Asn Glu Met Glu Leu Ala Lys Val Val 129 134 139 144	791
aag agc cac ccc agt gcc aag atg gtt ctg tgc att gct acc gat gac Lys Ser His Pro Ser Ala Lys Met Val Leu Cys Ile Ala Thr Asp Asp 145 150 155 160	839
tcc cac tcc ctg agc tgc ctg agc cta aag ttt gga gtg tca ctg aaa Ser His Ser Leu Ser Cys Leu Ser Leu Lys Phe Gly Val Ser Leu Lys 161 166 171 176	887
tcc tgc aga cac ctg ctt gaa aat gcg aag aag cac cat gtg gag gtg Ser Cys Arg His Leu Leu Glu Asn Ala Lys Lys His His Val Glu Val 177 182 187 192	935
gtg ggt gtg agt ttt cac att ggc agt ggc tgt cct gac cct cag gcc Val Gly Val Ser Phe His Ile Gly Ser Gly Cys Pro Asp Pro Gln Ala 193 198 203 208	983
tat gct cag tcc atc gca gac gcc cgg ctc gtg ttt gaa atg ggc acc Tyr Ala Gln Ser Ile Ala Asp Ala Arg Leu Val Phe Glu Met Gly Thr 209 214 219 224	1031
gag ctg ggt cac aag atg cac gtt ctg gac ctt ggt ggt ggc ttc cct Glu Leu Gly His Lys Met His Val Leu Asp Leu Gly Gly Gly Phe Pro 225 230 235 240	1079
ggc aca gaa ggg gcc aaa gtg aga ttt gaa gag att gct tcc gtg atc Gly Thr Glu Gly Ala Lys Val Arg Phe Glu Glu Ile Ala Ser Val Ile 241 246 251 256	1127
aac tca gcc ttg gac ctg tac ttc cca gag ggc tgt ggc gtg gac atc Asn Ser Ala Leu Asp Leu Tyr Phe Pro Glu Gly Cys Gly Val Asp Ile 257 262 267 272	1175
ttt gct gag ctg ggg cgc tac tac gtg acc tcg gcc ttc act gtg gca Phe Ala Glu Leu Gly Arg Tyr Tyr Val Thr Ser Ala Phe Thr Val Ala 273 278 283 288	1223
gtc agc atc att gcc aag aag gag gtt ctg cta gac cag cct ggc agg Val Ser Ile Ile Ala Lys Lys Glu Val Leu Leu Asp Gln Pro Gly Arg 289 294 299 304	1271
gag gag gaa aat ggt tcc acc tcc aag acc atc gtg tac cac ctt gat Glu Glu Glu Asn Gly Ser Thr Ser Lys Thr Ile Val Tyr His Leu Asp 305 310 315 320	1319
gag ggc gtg tat ggg atc ttc aac tca gtc ctg ttt gac aac atc tgc Glu Gly Val Tyr Gly Ile Phe Asn Ser Val Leu Phe Asp Asn Ile Cys 321 326 331 336	1367
cct acc ccc atc ctg cag aag aaa cca tcc acg gag cag ccc ctg tac	1415

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 gttccgcgcc ccgcccgcgc cggcgcgtag cgaacgcggg gccgtgtggc ggcccagacc 240
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 ggcccttga ggaacgagcg gcgaacgggc tgtgagcccc acccccagct cccatccaat 360
 caccgtccct cctccgggg gctgggcgga cgggctgcac tccaagcagc tagctcctgc 420
 actaggctct cagccaggg atg atg cgc tgc tgc cgc cgc tgc tgc tgc 472
 Met Met Arg Cys Cys Arg Arg Arg Cys Cys Cys
 1 5

cgg caa cca ccc cat gcc ctg agg ccg ttg ctg ttg ctg ccc ctc gtc 520
 Arg Gln Pro Pro His Ala Leu Arg Pro Leu Leu Leu Leu Pro Leu Val
 12 17 22 27

ctt tta cct ccc ctg gca gca gct gca gcg ggc cca aac cga tgt gac 568
 Leu Leu Pro Pro Leu Ala Ala Ala Ala Ala Gly Pro Asn Arg Cys Asp
 28 33 38 43

acc ata tac cag ggc ttc gcc gag tgt ctc atc cgc ttg ggg gac agc 616
 Thr Ile Tyr Gln Gly Phe Ala Glu Cys Leu Ile Arg Leu Gly Asp Ser
 44 49 54 59

atg ggc cgc gga ggc gag ctg gag acc atc tgc agg tct tgg aat gac 664
 Met Gly Arg Gly Gly Glu Leu Glu Thr Ile Cys Arg Ser Trp Asn Asp
 60 65 70 75

ttc cat gcc tgt gcc tct cag gtc ctg tca ggc tgt ccg gag gag gca 712
 Phe His Ala Cys Ala Ser Gln Val Leu Ser Gly Cys Pro Glu Glu Ala
 76 81 86 91

gct gca gtg tgg gaa tca cta cag caa gaa gct cgc cag gcc ccc cgt 760
 Ala Ala Val Trp Glu Ser Leu Gln Gln Glu Ala Arg Gln Ala Pro Arg
 92 97 102 107

ccg aat aac ttg cac act ctg tgc ggt gcc ccg gtg cat gtt cgg gag 808
 Pro Asn Asn Leu His Thr Leu Cys Gly Ala Pro Val His Val Arg Glu
 108 113 118 123

cgc ggc aca ggc tcc gaa acc aac cag gag acg ctg cgg gct aca gcg 856
 Arg Gly Thr Gly Ser Glu Thr Asn Gln Glu Thr Leu Arg Ala Thr Ala
 124 129 134 139

cct gca ctc ccc atg gcc cct gcg ccc cca ctg ctg gcg gct gct ctg 904
 Pro Ala Leu Pro Met Ala Pro Ala Pro Pro Leu Leu Ala Ala Ala Leu
 140 145 150 155

gct ctg gcc tac ctc ctg agg cct ctg gcc tag cttgttgg gttgggtagc 955
 Ala Leu Ala Tyr Leu Leu Arg Pro Leu Ala *
 156 161 166

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 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (58) .. (330)

<400> 879

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 Met His Thr Asp Pro Asp Tyr Ser Ala Ala Tyr Val Val Ile Glu Thr
 1 5 10 15
 gat gca gaa gat gga atc aag ggg tgt gga att acc ttc act ctg gga 153
 Asp Ala Glu Asp Gly Ile Lys Gly Cys Gly Ile Thr Phe Thr Leu Gly
 17 22 27 32
 aaa ggc act gaa gtt gat tgg tcc aga aaa ggg cgt ggt gca cct ggc 201
 Lys Gly Thr Glu Val Asp Trp Ser Arg Lys Gly Arg Gly Ala Pro Gly
 33 38 43 48
 gac agc ggc cgt cct aaa cgc ggt gtg gga ctt gtg ggc caa gca gga 249
 Asp Ser Gly Arg Pro Lys Arg Gly Val Gly Leu Val Gly Gln Ala Gly
 49 54 59 64
 ggg aaa gcc tgt ctg gaa gtt act tgt gga cat gga tcc cag gat gct 297
 Gly Lys Ala Cys Leu Glu Val Thr Cys Gly His Gly Ser Gln Asp Ala
 65 70 75 80
 ggt atc ctg cat aga ttt cag gta cat cac tga tgcctga ctgaggagga 348
 Gly Ile Leu His Arg Phe Gln Val His His *
 81 86 91
 tgcctagaa atactgcaga aagggtcaaatt tggtaaaaaa gaaagagaga agcaaagtct 408
 ggcacaagga taccctgctt acacgacatc gtgcgcctgg ctgggggtact cagatgacac 468
 gttgaagcag ctctgtgccc aggcgctgaa ggatggctgg accaggttta aagtaaaggt 528
 ggggtgctgat ctccaggatg acatgcgaag atgccaaatc atccgagaca tgattggacc 588
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 cattctgggg cagccacca tttccaaggc actgggtccca ttaggaattg gcattgacac 768
 aggagaacag tgccacaata gattgatatt taagcaactc ctacaggcga aggccctgca 828

gttcctccag attgacagtt gcagactggg cagtgtcaat gagaacctct cagtattgct 888
gatggccaaa aagtttgaaa ttctgtttg ccccatgct ggtggagttg gcctctgtga 948
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caaccctaa agactgacaa tatccttcaa gctcctttga aagcacccta aacagccatt 1428
tccattttta tagttggatg cggattgtac ccttcaatct gaaagtcttc agctttgaag 1488
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ctcctcatgt ccatgaaaca agtacacagg atgtgatcaa caaagttcta ttttacagga 1668
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tctcttgacc acagatcgag agtgaggggt attttgtgac attacacagc atcaggagcc 1788
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acacagtca 1857

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<212> DNA
<213> Homo sapiens

<220>
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<222> (366)..(1289)

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tgtgagagga cgcccgcca gcctgcggga gccgcagtcg gcggaggaga aaggaggcgg 180
ctcccggtat ccgaccccc tccccctct cttcttcccc cacttccagc cgcccgcg 240

cccgcgcttt ctcgaaggcc ccagcccggc tcagtcggcc gagagcgagg gaggagcccc 300
 ccgacccagg tagacgttac atccaagagg aaataatcca ggcaaggaag cacaagctga 360
 tcaag atg tgt agt tct gtg gct gcc aag ttg tgg ttt ttg aca gat 407
 Met Cys Ser Ser Val Ala Ala Lys Leu Trp Phe Leu Thr Asp
 1 5 10
 cgt cgc atc agg gaa gac tat cct caa aaa gag att tta cga gca ttg 455
 Arg Arg Ile Arg Glu Asp Tyr Pro Gln Lys Glu Ile Leu Arg Ala Leu
 15 20 25 30
 aag gcc aaa tgt tgt gag gag gaa ctg gac ttt agg gct gtg gtg atg 503
 Lys Ala Lys Cys Cys Glu Glu Glu Leu Asp Phe Arg Ala Val Val Met
 31 36 41 46
 gat gag gtg gtg ctg aca atc gag caa gga aac ctg ggt ctg cgg atc 551
 Asp Glu Val Val Leu Thr Ile Glu Gln Gly Asn Leu Gly Leu Arg Ile
 47 52 57 62
 aat gga gag cta atc act gcc tac cca caa gtg gtg gta gtc aga gta 599
 Asn Gly Glu Leu Ile Thr Ala Tyr Pro Gln Val Val Val Val Arg Val
 63 68 73 78
 cca acc cct tgg gtg caa agt gat agt gac atc act gtt ttg cgc cat 647
 Pro Thr Pro Trp Val Gln Ser Asp Ser Asp Ile Thr Val Leu Arg His
 79 84 89 94
 cta gag aag atg gga tgt cgg tta atg aac cga cct caa gcc atc ctg 695
 Leu Glu Lys Met Gly Cys Arg Leu Met Asn Arg Pro Gln Ala Ile Leu
 95 100 105 110
 aac tgc gtt aat aag ttc tgg aca ttt caa gag ttg gct ggc cat ggt 743
 Asn Cys Val Asn Lys Phe Trp Thr Phe Gln Glu Leu Ala Gly His Gly
 111 116 121 126
 gtt cct ctg ccg gat act ttc tct tat ggt ggc cac gaa aat ttt gct 791
 Val Pro Leu Pro Asp Thr Phe Ser Tyr Gly Gly His Glu Asn Phe Ala
 127 132 137 142
 aaa atg att gat gag gct gaa gtt ctg gag ttc cca atg gta gta aag 839
 Lys Met Ile Asp Glu Ala Glu Val Leu Glu Phe Pro Met Val Val Lys
 143 148 153 158
 aat acg cgg ggt cac aga ggt aaa gct gtt ttc ttg gct cga gat aag 887
 Asn Thr Arg Gly His Arg Gly Lys Ala Val Phe Leu Ala Arg Asp Lys
 159 164 169 174
 cac cat ttg gct gat cta agc cat ctt att cgc cat gaa gcg cca tac 935
 His His Leu Ala Asp Leu Ser His Leu Ile Arg His Glu Ala Pro Tyr
 175 180 185 190
 ktg ttc cag aag tat gtt aaa gag tct cat gga cgg gat gta cgt gtc 983
 Leu Phe Gln Lys Tyr Val Lys Glu Ser His Gly Arg Asp Val Arg Val
 191 196 201 206

att gtc gtg gga ggc cgt gtg gtt ggc acc atg tta cgt tgt tca aca	1031
Ile Val Val Gly Gly Arg Val Val Gly Thr Met Leu Arg Cys Ser Thr	
207 212 217 222	
gat ggg aga atg caa agc aac tgc tca tta ggt ggt gtg ggg atg atg	1079
Asp Gly Arg Met Gln Ser Asn Cys Ser Leu Gly Gly Val Gly Met Met	
223 228 233 238	
tgc tca ttg agt gaa caa ggg aag cag cta gct atc cag gtg tct aat	1127
Cys Ser Leu Ser Glu Gln Gly Lys Gln Leu Ala Ile Gln Val Ser Asn	
239 244 249 254	
atc ctg ggg atg gat gtg tgt ggc att gac ctg ctg atg aaa gat gac	1175
Ile Leu Gly Met Asp Val Cys Gly Ile Asp Leu Leu Met Lys Asp Asp	
255 260 265 270	
ggc tcc ttc tgc gtc tgt gag gcc aat gca aat cct ttt cag gag cca	1223
Gly Ser Phe Cys Val Cys Glu Ala Asn Ala Asn Pro Phe Gln Glu Pro	
271 276 281 286	
aaa aaa caa ata caa aca aac aaa aaa ata ccc aga gaa aaa act ttc	1271
Lys Lys Gln Ile Gln Thr Asn Lys Lys Ile Pro Arg Glu Lys Thr Phe	
287 292 297 302	
ctt ctt ccc cct tcc tga tgatga gtgagaagta ttgagaactt tcgggggtcag	1325
Leu Leu Pro Pro Ser *	
303 308	
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gtttggattc aggcacagcc	1405

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 <211> 2412
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (67) .. (1395)

<400> 881	
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ttgcac atg ggt ccg ccc atg gag cac gga tgg tcc tac gct cgg gcg	108
Met Gly Pro Pro Met Glu His Gly Trp Ser Tyr Ala Arg Ala	
1 5 10	
ggg ggc agc tct cgg ggc tgc tgg tat tac ctg cgc tac ttc ttc ctc	156
Gly Gly Ser Ser Arg Gly Cys Trp Tyr Tyr Leu Arg Tyr Phe Phe Leu	
15 20 25 30	
ttc gtc tcc ctc atc caa ttc ctc atc atc ctg ggg ctc gtg ctc ttc	204
Phe Val Ser Leu Ile Gln Phe Leu Ile Ile Leu Gly Leu Val Leu Phe	

atg gtc tat ggc aac gtg cac gtg agc aca gag tcc aac ctg cag gcc Met Val Tyr Gly Asn Val His Val Ser Thr Glu Ser Asn Leu Gln Ala 47 52 57 62	252
acc gag cgc cga gcc gag ggc cta tac agt cag ctc cta ggg ctc acg Thr Glu Arg Arg Ala Glu Gly Leu Tyr Ser Gln Leu Leu Gly Leu Thr 63 68 73 78	300
gcc tcc cag tcc aac ttg acc aag gag ctc aac ttc acc acc cgc gcc Ala Ser Gln Ser Asn Leu Thr Lys Glu Leu Asn Phe Thr Thr Arg Ala 79 84 89 94	348
aag gat gcc atc atg cag atg tgg ctg aat gct cgc cgc gac ctg gac Lys Asp Ala Ile Met Gln Met Trp Leu Asn Ala Arg Arg Asp Leu Asp 95 100 105 110	396
cgc atc aat gcc agc ttc cgc cag tgc cag ggt gac cgg gtc atc tac Arg Ile Asn Ala Ser Phe Arg Gln Cys Gln Gly Asp Arg Val Ile Tyr 111 116 121 126	444
acg aac aat cag agg tac atg gct gcc atc atc ttg agt gag aag caa Thr Asn Asn Gln Arg Tyr Met Ala Ala Ile Ile Leu Ser Glu Lys Gln 127 132 137 142	492
tgc aga gat caa ttc aag gac atg aac aag agc tgc gat gcc ttg ctc Cys Arg Asp Gln Phe Lys Asp Met Asn Lys Ser Cys Asp Ala Leu Leu 143 148 153 158	540
ttc atg ctg aat cag aag gtg aag acg ctg gag gtg gag ata gcc aag Phe Met Leu Asn Gln Lys Val Lys Thr Leu Glu Val Glu Ile Ala Lys 159 164 169 174	588
gag aag acc att tgc act aag gat aag gaa agc gtg ctg ctg aac aaa Glu Lys Thr Ile Cys Thr Lys Asp Lys Glu Ser Val Leu Leu Asn Lys 175 180 185 190	636
cgc gtg gcg gag gaa cag ctg gtt gaa tgc gtg aaa acc cgg gag ctg Arg Val Ala Glu Glu Gln Leu Val Glu Cys Val Lys Thr Arg Glu Leu 191 196 201 206	684
cag cac caa gag cgc cag ctg gcc aag gag caa ctg caa aag gtg caa Gln His Gln Glu Arg Gln Leu Ala Lys Glu Gln Leu Gln Lys Val Gln 207 212 217 222	732
gcc ctc tgc ctg ccc ctg gac aag gac aag ttt gag atg gac ctt cgt Ala Leu Cys Leu Pro Leu Asp Lys Asp Lys Phe Glu Met Asp Leu Arg 223 228 233 238	780
aac ctg tgg agg gac tcc att atc cca cgc agc ctg gac aac ctg ggt Asn Leu Trp Arg Asp Ser Ile Ile Pro Arg Ser Leu Asp Asn Leu Gly 239 244 249 254	828
tac aac ctc tac cat ccc ctg ggc tcg gaa ttg gcc tcc atc cgc aga Tyr Asn Leu Tyr His Pro Leu Gly Ser Glu Leu Ala Ser Ile Arg Arg 255 260 265 270	876

gcc tgc gac cac atg ccc agc ctc atg agc tcc aag gtg gag gag ctg Ala Cys Asp His Met Pro Ser Leu Met Ser Ser Lys Val Glu Glu Leu 271 276 281 286	924
gcc cgg agc ctc cgg gcg gat atc gaa cgc gtg gcc cgc gag aac tca Ala Arg Ser Leu Arg Ala Asp Ile Glu Arg Val Ala Arg Glu Asn Ser 287 292 297 302	972
gac ctc caa cgc cag aag ctg gaa gcc cag cag ggc ctg cgg gcc agt Asp Leu Gln Arg Gln Lys Leu Glu Ala Gln Gln Gly Leu Arg Ala Ser 303 308 313 318	1020
cag gag gcg aaa cag aag gtg gag aag gag gct cag gcc cgg gag gcc Gln Glu Ala Lys Gln Lys Val Glu Lys Glu Ala Gln Ala Arg Glu Ala 319 324 329 334	1068
aag ctc caa gct gaa tgc tcc cgg cag acc cag cta gcg ctg gag gag Lys Leu Gln Ala Glu Cys Ser Arg Gln Thr Gln Leu Ala Leu Glu Glu 335 340 345 350	1116
aag gcg gtg ctg cgg aag gaa cga gac aac ctg gcc aag gag ctg gaa Lys Ala Val Leu Arg Lys Glu Arg Asp Asn Leu Ala Lys Glu Leu Glu 351 356 361 366	1164
gag aag aag agg gag gcg gag cag ctc agg atg gag ctg gcc atc aga Glu Lys Lys Arg Glu Ala Glu Gln Leu Arg Met Glu Leu Ala Ile Arg 367 372 377 382	1212
aac tca gcc ctg gac acc tgc atc aag acc aag tcg cag ccg atg atg Asn Ser Ala Leu Asp Thr Cys Ile Lys Thr Lys Ser Gln Pro Met Met 383 388 393 398	1260
cca gtg tca agg ccc atg ggc cct gtc ccc aac ccc cag ccc atc gac Pro Val Ser Arg Pro Met Gly Pro Val Pro Asn Pro Gln Pro Ile Asp 399 404 409 414	1308
cca gct agc ctg gag gag ttc aag agg aag atc ctg gag tcc cag agg Pro Ala Ser Leu Glu Glu Phe Lys Arg Lys Ile Leu Glu Ser Gln Arg 415 420 425 430	1356
ccc cct gca ggc atc cct gta gcc cca tcc agt ggc tga ggaggctcca Pro Pro Ala Gly Ile Pro Val Ala Pro Ser Ser Gly *	1405
431 436 441	
ggcctgagga ccaagggatg gcccgactcg gcggtttgcg gaggatgcag ggatatgctc	1465
acagcgcccc acacaacccc ctcccgccgc ccccaaccac ccagggccac catcagacaa	1525
ctccctgcat gcaaaccctt agtaccctct cacaccgcga cccgcgcctc acgatccctc	1585
accagagca cacggccgcg gagatgacgt cacgcaagca acggcgctga cgtcacatat	1645
caccgtggtg atggcgtcac gtggccatgt agacgtcacg aagagatata gcgatggcgt	1705
cgtgcagatg caggcacggt cgcacacaga catggggaac ttggcatgac gttcacaccg	1765

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agatgcagca acgacgtcac gggccatgtc gacgtcacac atattaatgt cacacagacg 1825
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catgacaacg acacctatag atatggcacc aacatcacat gcacgcatgc cctttcacac 1945
acactttcta cccaattctc acctagtgtc acgttcccc gaccctggca cacgggccaa 2005
ggtaccacaca ggatcccatc cctcccgca cagccctggg cccagcacc tcccctcctc 2065
cagcttcctg gcctcccagc cacttcctca ccccagtgct ctggaccgg aggtgagaac 2125
aggaagccat tcacctcgc tccttgagcg tgagtgtttc caggacccc tcggggccct 2185
gagccggggg tgagggtcac ctgttgctcg gaggggagcc actccttctc cccaactcc 2245
cagccctgcc tgtggcccg tgaatgttg gtggcactta ataatatta gtaaatcctt 2305
aagaaaacaa gacccctcg gagccctaaa aaaaagaaa agaaaaactg gggggggggg 2365
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<213> Homo sapiens

<220>
<221> CDS
<222> (208)..(750)

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gggagtgagg aagagagcag ctgccttcta actggactgc acgttggtga cagcgtccca 120
agctggtgac agaccactc tgtaactttc agctagattc agccaccaga tcccagaaac 180
atgacccttg ctgcctacaa agagaag      atg aag gag ctg ccg ctg gtg tcc 231
                                Met Lys Glu Leu Pro Leu Val Ser
                                1                      5

ttg ttc tgc tcc tgc ttc ctg gcc gat ccc ctg aat aag tcg tcc tac 279
Leu Phe Cys Ser Cys Phe Leu Ala Asp Pro Leu Asn Lys Ser Ser Tyr
  9                      14                      19                      24

aaa tat gaa gca gac acg gtg gac ctg aat tgg tgc gtc att tcc gac 327
Lys Tyr Glu Ala Asp Thr Val Asp Leu Asn Trp Cys Val Ile Ser Asp
  25                      30                      35                      40

atg gaa gtc atc gag ctg aac aaa tgc acc tcg ggc caa tcc ttt gaa 375
Met Glu Val Ile Glu Leu Asn Lys Cys Thr Ser Gly Gln Ser Phe Glu
  41                      46                      51                      56

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gtc atc ctg aag cca ccc tcc ttt gat ggg gtt ccc gag ttc aac gcc      423
Val Ile Leu Lys Pro Pro Ser Phe Asp Gly Val Pro Glu Phe Asn Ala
57                      62                      67                      72

tcc ctg cca agg cgg cga gac cca tcc ctg gaa gag atc cag aag aaa      471
Ser Leu Pro Arg Arg Arg Asp Pro Ser Leu Glu Glu Ile Gln Lys Lys
73                      78                      83                      88

cta gaa gcg gct gag gag cga agg aag tac cag gaa gcg gag ctc ctg      519
Leu Glu Ala Ala Glu Glu Arg Arg Lys Tyr Gln Glu Ala Glu Leu Leu
89                      94                      99                      104

aaa cac cta gca gag aaa cgg gaa cat gag aga gag gtg atc caa aag      567
Lys His Leu Ala Glu Lys Arg Glu His Glu Arg Glu Val Ile Gln Lys
105                      110                      115                      120

gcc att gag gaa aac aac aac ttc atc aag atg gct aag gaa aaa ctg      615
Ala Ile Glu Glu Asn Asn Asn Phe Ile Lys Met Ala Lys Glu Lys Leu
121                      126                      131                      136

gcc cag aag atg gaa tcc aac aag gag aac agg gag gcc cac ctc gcc      663
Ala Gln Lys Met Glu Ser Asn Lys Glu Asn Arg Glu Ala His Leu Ala
137                      142                      147                      152

gcc atg ttg gaa cgg ctg caa gag aag gac aag cac gcc gag gag gtg      711
Ala Met Leu Glu Arg Leu Gln Glu Lys Asp Lys His Ala Glu Glu Val
153                      158                      163                      168

cgg aaa aac aag gag ctg aag gaa gag gcc tcc agg taa agcctagagg      760
Arg Lys Asn Lys Glu Leu Lys Glu Glu Ala Ser Arg *
169                      174                      179

ccaaagaact ttccaggtca gccggacagc tccagcagct ccacgttcca ggcagcctcg      820

cccgccggct gcgctcccag cact                                           844

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<210> 883
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 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (181)..(831)

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gggagtgagg aagagagcag ctgcgttcta actggactgc acgttggtga cagcgtccca      120

agctggtgac agaccactc tgtaactttc agctagattc agccaccaga tcccagaaac      180

atg acc ctt gct gcc tac aaa gag aag atg aag gag ctc ccg ctg gtg      228
Met Thr Leu Ala Ala Tyr Lys Glu Lys Met Lys Glu Leu Pro Leu Val

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1	5	10	15	
tcc ttg ttc tgc tcc tgc ttc ctg gcc gat ccc ctg aat aag tcg tcc				276
Ser Leu Phe Cys Ser Cys Phe Leu Ala Asp Pro Leu Asn Lys Ser Ser				
17	22	27	32	
tac aaa tat gaa ggc tgg tgt ggg aga cag tgt agg agg aag gat gaa				324
Tyr Lys Tyr Glu Gly Trp Cys Gly Arg Gln Cys Arg Arg Lys Asp Glu				
33	38	43	48	
agc cag cgg aaa gac agt gct gac tgg aga gaa aga aga gct cag gca				372
Ser Gln Arg Lys Asp Ser Ala Asp Trp Arg Glu Arg Arg Ala Gln Ala				
49	54	59	64	
gac acg gtg gac ctg aat tgg tgc gtc att tcc gac atg gaa gtc atc				420
Asp Thr Val Asp Leu Asn Trp Cys Val Ile Ser Asp Met Glu Val Ile				
65	70	75	80	
gag ctg aac aaa tgc acc tcg ggc caa tcc ttt gaa gtc atc ctg aag				468
Glu Leu Asn Lys Cys Thr Ser Gly Gln Ser Phe Glu Val Ile Leu Lys				
81	86	91	96	
cca ccc tcc ttt gat ggg gtt ccc gag ttc aac gcc tcc ctg cca agg				516
Pro Pro Ser Phe Asp Gly Val Pro Glu Phe Asn Ala Ser Leu Pro Arg				
97	102	107	112	
cgg cga gac cca tcc ctg gaa gag atc cag aag aaa cta gaa gcg gct				564
Arg Arg Asp Pro Ser Leu Glu Glu Ile Gln Lys Lys Leu Glu Ala Ala				
113	118	123	128	
gag gag cga agg aag tac cag gaa gcg gag ctc ctg aaa cac cta gca				612
Glu Glu Arg Arg Lys Tyr Gln Glu Ala Glu Leu Leu Lys His Leu Ala				
129	134	139	144	
gag aaa cgg gaa cat gag aga gag gtg atc caa aag gcc att gag gaa				660
Glu Lys Arg Glu His Glu Arg Glu Val Ile Gln Lys Ala Ile Glu Glu				
145	150	155	160	
aac aac aac ttc atc aag atg gct aag gaa aaa ctg gcc cag aag atg				708
Asn Asn Asn Phe Ile Lys Met Ala Lys Glu Lys Leu Ala Gln Lys Met				
161	166	171	176	
gaa tcc aac aag gag aac agg gag gcc cac ctc gcc gcc atg ttg gaa				756
Glu Ser Asn Lys Glu Asn Arg Glu Ala His Leu Ala Ala Met Leu Glu				
177	182	187	192	
cgg ctg caa gag aag gac aag cac gcc gag gag gtg cgg aaa aac aag				804
Arg Leu Gln Glu Lys Asp Lys His Ala Glu Glu Val Arg Lys Asn Lys				
193	198	203	208	
gag ctg aag gaa gag gcc tcc agg taa agcct agaggccaaa gaactttcca				856
Glu Leu Lys Glu Glu Ala Ser Arg *				
209	214			
ggtcagccgg acagctccag cagctccacg ttccaggcag cctcgcccg cggctgcgct				916
cccagcact				925

<210> 884
 <211> 2758
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (91)..(1881)

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 gcgttgtggg gcaggggggtg gtggagcaag atg gcg gct cat ctg tcc tac 111
 Met Ala Ala His Leu Ser Tyr
 1 5
 ggc cga gtg aac cta aac gtg ttg cgc gag gcg gtg cgt cgc gag ctg 159
 Gly Arg Val Asn Leu Asn Val Leu Arg Glu Ala Val Arg Arg Glu Leu
 8 13 18 23
 cgc gag ttc ctg gac aag tgc gca gga agc aag gca ata gtt tgg gat 207
 Arg Glu Phe Leu Asp Lys Cys Ala Gly Ser Lys Ala Ile Val Trp Asp
 24 29 34 39
 gaa tac cta act gga ccc ttt ggc ctg att gca cag tat tca cta ttg 255
 Glu Tyr Leu Thr Gly Pro Phe Gly Leu Ile Ala Gln Tyr Ser Leu Leu
 40 45 50 55
 aag gaa cat gaa gtg gaa aaa atg ttc aca ctt aaa gga aat cgt ttg 303
 Lys Glu His Glu Val Glu Lys Met Phe Thr Leu Lys Gly Asn Arg Leu
 56 61 66 71
 ccg gca gct gat gtg aag aat ata att ttt ttt gtc aga ccc agg cta 351
 Pro Ala Ala Asp Val Lys Asn Ile Ile Phe Phe Val Arg Pro Arg Leu
 72 77 82 87
 gag ttg atg gat ata atc gct gaa aac gtg ctc agt gaa gat aga cga 399
 Glu Leu Met Asp Ile Ile Ala Glu Asn Val Leu Ser Glu Asp Arg Arg
 88 93 98 103
 ggc cca acg aga gat ttt cat att ctg ttt gtg cca cgc cgt agc ctg 447
 Gly Pro Thr Arg Asp Phe His Ile Leu Phe Val Pro Arg Arg Ser Leu
 104 109 114 119
 ttg tgc gaa cag cgg ttg aag gat ctg ggt gtc ttg gga tcc ttt att 495
 Leu Cys Glu Gln Arg Leu Lys Asp Leu Gly Val Leu Gly Ser Phe Ile
 120 125 130 135
 cac agg gag gag tac agc tta gat ctc att cca ttc gat ggg gat ctc 543
 His Arg Glu Gly Tyr Ser Leu Asp Leu Ile Pro Phe Asp Gly Asp Leu
 136 141 146 151
 tta tcc atg gaa tca gag ggt gca ttc aaa gag tgc tac ctg gag ggt 591

Leu Ser Met Glu Ser Glu Gly Ala Phe Lys Glu Cys Tyr Leu Glu Gly	
152	157 162 167
gac cag acg agc ctg tac cac gca gcc aag ggg ctg atg acc ctg caa	639
Asp Gln Thr Ser Leu Tyr His Ala Ala Lys Gly Leu Met Thr Leu Gln	
168	173 178 183
gct ctg tat gga acg atc ccc cag atc ttt ggg aaa gga gaa tgc gct	687
Ala Leu Tyr Gly Thr Ile Pro Gln Ile Phe Gly Lys Gly Glu Cys Ala	
184	189 194 199
cgg caa gtg gcc aat atg atg atc agg atg aag aga gag ttt aca gga	735
Arg Gln Val Ala Asn Met Met Ile Arg Met Lys Arg Glu Phe Thr Gly	
200	205 210 215
agc cag aat tca ata ttt cct gtt ttt gat aat ctc ttg ttg ctt gat	783
Ser Gln Asn Ser Ile Phe Pro Val Phe Asp Asn Leu Leu Leu Leu Asp	
216	221 226 231
cgg aat gtg gat tta tta aca cct ctt gcc act cag ctg aca tat gaa	831
Arg Asn Val Asp Leu Leu Thr Pro Leu Ala Thr Gln Leu Thr Tyr Glu	
232	237 242 247
gga ctc att gat gaa att tat ggc att cag aac agt tat gtg aaa tta	879
Gly Leu Ile Asp Glu Ile Tyr Gly Ile Gln Asn Ser Tyr Val Lys Leu	
248	253 258 263
cct cca gag aaa ttt gca cct aaa aaa cag ggc gat ggt ggt aag gac	927
Pro Pro Glu Lys Phe Ala Pro Lys Lys Gln Gly Asp Gly Gly Lys Asp	
264	269 274 279
ctc ccc acg gaa gca aag aag ctg cag ctg aat tct gca gag gag ctc	975
Leu Pro Thr Glu Ala Lys Lys Leu Gln Leu Asn Ser Ala Glu Glu Leu	
280	285 290 295
tat gct gag atc cga gat aag aac ttc aac gca gtt ggc tct gtg ctc	1023
Tyr Ala Glu Ile Arg Asp Lys Asn Phe Asn Ala Val Gly Ser Val Leu	
296	301 306 311
agc aag aaa gca aag atc atc tct gca gca ttc gag gaa aga cac aat	1071
Ser Lys Lys Ala Lys Ile Ile Ser Ala Ala Phe Glu Glu Arg His Asn	
312	317 322 327
gct aag acc gtg ggg gag atc aag cag ttt gtt tcc cag ttg ccc cac	1119
Ala Lys Thr Val Gly Glu Ile Lys Gln Phe Val Ser Gln Leu Pro His	
328	333 338 343
atg cag gca gca agg ggc tcg ctt gca aac cat acc tca att gca gaa	1167
Met Gln Ala Ala Arg Gly Ser Leu Ala Asn His Thr Ser Ile Ala Glu	
344	349 354 359
ttg atc aaa gat gtc act act tct gaa gac ttt ttt gat aaa tta acc	1215
Leu Ile Lys Asp Val Thr Thr Ser Glu Asp Phe Phe Asp Lys Leu Thr	
360	365 370 375
gtg gaa cag gag ttt atg tct gga ata gac act gat aag gtc aac aat	1263
Val Glu Gln Glu Phe Met Ser Gly Ile Asp Thr Asp Lys Val Asn Asn	

376	381	386	391	
tac att gag gat tgt atc gcc caa aag cac tcg ttg atc aag gtg tta				1311
Tyr Ile Glu Asp Cys Ile Ala Gln Lys His Ser Leu Ile Lys Val Leu				
392	397	402	407	
aga cta gtt tgc ctc caa tcc gtg tgt aat agt ggg ctc aaa caa aaa				1359
Arg Leu Val Cys Leu Gln Ser Val Cys Asn Ser Gly Leu Lys Gln Lys				
408	413	418	423	
gtt ttg gat tat tac aaa aga gag att ctc cag aca tac ggc tat gag				1407
Val Leu Asp Tyr Tyr Lys Arg Glu Ile Leu Gln Thr Tyr Gly Tyr Glu				
424	429	434	439	
cac ata ttg acc tta cac aac ctg gag aag gcc ggc ctg ctg aaa ccg				1455
His Ile Leu Thr Leu His Asn Leu Glu Lys Ala Gly Leu Leu Lys Pro				
440	445	450	455	
cag acg ggg ggc aga aac aat tac cca act ata cgg aaa aca tta cgc				1503
Gln Thr Gly Gly Arg Asn Asn Tyr Pro Thr Ile Arg Lys Thr Leu Arg				
456	461	466	471	
ctc tgg atg gat gat gtt aat gag caa aac ccc acg gac ata tcg tat				1551
Leu Trp Met Asp Asp Val Asn Glu Gln Asn Pro Thr Asp Ile Ser Tyr				
472	477	482	487	
gtg tac agt ggg tat gcc ccg ctc agt gtg cgg ctg gcc cag ctg ctt				1599
Val Tyr Ser Gly Tyr Ala Pro Leu Ser Val Arg Leu Ala Gln Leu Leu				
488	493	498	503	
tcc cgg cct ggc tgg cgg agc atc gag gag gtc ctc cgc atc ctc cca				1647
Ser Arg Pro Gly Trp Arg Ser Ile Glu Glu Val Leu Arg Ile Leu Pro				
504	509	514	519	
ggg ccc cac ttt gag gag cgg cag cca ctg ccc aca gga ctg cag aag				1695
Gly Pro His Phe Glu Glu Arg Gln Pro Leu Pro Thr Gly Leu Gln Lys				
520	525	530	535	
aaa cgt caa ccg gga gaa aac cga gtg act ctg ata ttt ttc ctt ggg				1743
Lys Arg Gln Pro Gly Glu Asn Arg Val Thr Leu Ile Phe Phe Leu Gly				
536	541	546	551	
ggc gta acc ttc gct gaa att gct gcc ctg cga ttt ctc tcc cag ttg				1791
Gly Val Thr Phe Ala Glu Ile Ala Ala Leu Arg Phe Leu Ser Gln Leu				
552	557	562	567	
gaa gat gga ggt aca gaa tat gtc att gcc acc act aaa cta atg aat				1839
Glu Asp Gly Gly Thr Glu Tyr Val Ile Ala Thr Thr Lys Leu Met Asn				
568	573	578	583	
gga acc agt tgg ata gag gct ctg atg gaa aaa cct ttc tag gatgttc				1888
Gly Thr Ser Trp Ile Glu Ala Leu Met Glu Lys Pro Phe *				
584	589	594		
agaggagact taacaagtgt actgcagaat aaactacctc tttgaagaaa ttgctgaaag				1948
gaagtaaaac cccatagaag aaacatggga atacagaata tattctgggg tcagcttctt				2008

aaattataact actgtttact gctttctcog tctcttttgt attccctttt ttttttcctt 2068
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 gcaacctcca cctcctaggt tcaagcaatt ctctgcctc agcctcctga gtagctggga 2188
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 cagggtcttc attagagacc tctggaaata cattaaggat ggtgggggta gataatccat 2488
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 tgaaaataaa aagagaaagt tcactctcta atccccagtg ctgtatttct tcaagggtgca 2608
 tcaggcctag gacagtgggt aagtgttggg agctggagat cattttatca ctgagttgag 2668
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 <213> Homo sapiens

<220>
 <221> CDS
 <222> (131) .. (1252)

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 ctgatttgag atg ggg tcc cag gtc tcg gtg gaa tcg gga gct ctg cac 169
 Met Gly Ser Gln Val Ser Val Glu Ser Gly Ala Leu His
 1 5 10
 gtg gtg att gtg ggt ggg ggc ttt ggc ggg atc gca gca gcc agc cag 217
 Val Val Ile Val Gly Gly Gly Phe Gly Gly Ile Ala Ala Ala Ser Gln
 14 19 24 29
 ctg cag gcc ctg aac gtc ccc ttc atg ctg gtg gac atg aag gac tcc 265
 Leu Gln Ala Leu Asn Val Pro Phe Met Leu Val Asp Met Lys Asp Ser
 30 35 40 45
 ttc cac cac aat gtg gct gct ctg cga gcc tcc gtg gag aca ggg ttc 313

Phe	His	His	Asn	Val	Ala	Ala	Leu	Arg	Ala	Ser	Val	Glu	Thr	Gly	Phe	
46					51					56					61	
gcc	aaa	aag	aca	ttc	att	tct	tac	tcg	gtg	act	ttc	aag	gac	aac	ttc	361
Ala	Lys	Lys	Thr	Phe	Ile	Ser	Tyr	Ser	Val	Thr	Phe	Lys	Asp	Asn	Phe	
62					67					72					77	
cgg	cag	ggg	cta	gta	gtg	ggg	ata	gac	ctg	aag	aac	cag	atg	gtg	ctg	409
Arg	Gln	Gly	Leu	Val	Val	Gly	Ile	Asp	Leu	Lys	Asn	Gln	Met	Val	Leu	
78					83					88					93	
ctg	cag	ggt	ggc	gag	gcc	ctg	ccc	ttc	tct	cat	ctt	atc	ctg	gcc	acg	457
Leu	Gln	Gly	Gly	Glu	Ala	Leu	Pro	Phe	Ser	His	Leu	Ile	Leu	Ala	Thr	
94					99					104					109	
ggc	agc	act	ggg	ccc	ttc	ccg	ggc	aag	ttt	aat	gag	gtt	tcc	agc	cag	505
Gly	Ser	Thr	Gly	Pro	Phe	Pro	Gly	Lys	Phe	Asn	Glu	Val	Ser	Ser	Gln	
110					115					120					125	
cag	gcc	gct	atc	cag	gcc	tat	gag	gac	atg	gtg	agg	cag	gtc	cag	cgc	553
Gln	Ala	Ala	Ile	Gln	Ala	Tyr	Glu	Asp	Met	Val	Arg	Gln	Val	Gln	Arg	
126					131					136					141	
tca	cgg	ttc	atc	gtg	gtg	gtg	gga	gga	ggc	tcg	gct	gga	gtg	gag	atg	601
Ser	Arg	Phe	Ile	Val	Val	Val	Gly	Gly	Gly	Ser	Ala	Gly	Val	Glu	Met	
142					147					152					157	
gca	gca	gag	att	aaa	aca	gaa	tat	cct	gag	aaa	gag	gtc	act	ctc	att	649
Ala	Ala	Glu	Ile	Lys	Thr	Glu	Tyr	Pro	Glu	Lys	Glu	Val	Thr	Leu	Ile	
158					163					168					173	
cac	tcc	caa	gtg	gcc	ctg	gct	gac	aag	gag	ctc	ctg	ccc	tcc	gtc	cgg	697
His	Ser	Gln	Val	Ala	Leu	Ala	Asp	Lys	Glu	Leu	Leu	Pro	Ser	Val	Arg	
174					179					184					189	
cag	gaa	gtg	aag	gag	atc	ctc	ctc	cgg	aag	ggc	gtg	cag	ctg	ctg	ctg	745
Gln	Glu	Val	Lys	Glu	Ile	Leu	Leu	Arg	Lys	Gly	Val	Gln	Leu	Leu	Leu	
190					195					200					205	
agt	gag	cgg	gtg	agc	aat	ctg	gag	gag	ctg	cct	ctc	aat	gag	tat	cga	793
Ser	Glu	Arg	Val	Ser	Asn	Leu	Glu	Glu	Leu	Pro	Leu	Asn	Glu	Tyr	Arg	
206					211					216					221	
gag	tac	atc	aaa	gtg	cag	acg	gac	aaa	ggc	aca	gag	gtg	gcc	acc	aac	841
Glu	Tyr	Ile	Lys	Val	Gln	Thr	Asp	Lys	Gly	Thr	Glu	Val	Ala	Thr	Asn	
222					227					232					237	
ctg	gtg	att	ctc	tgc	acc	ggc	atc	aag	atc	aac	agc	tcc	gcc	tac	cgc	889
Leu	Val	Ile	Leu	Cys	Thr	Gly	Ile	Lys	Ile	Asn	Ser	Ser	Ala	Tyr	Arg	
238					243					248					253	
aaa	gca	ttt	gag	agc	aga	cta	gcc	agc	agt	ggt	gct	ctg	aga	gtg	aac	937
Lys	Ala	Phe	Glu	Ser	Arg	Leu	Ala	Ser	Ser	Gly	Ala	Leu	Arg	Val	Asn	
254					259					264					269	
gag	cac	ctc	cag	gtg	gag	ggc	cac	agc	aac	gtc	tac	gcc	att	ggt	gac	985
Glu	His	Leu	Gln	Val	Glu	Gly	His	Ser	Asn	Val	Tyr	Ala	Ile	Gly	Asp	

270	275	280	285	
tgt gcc gac gtg agg acg ccc aag atg gcc tat ctt gcc ggc ctc cac				1033
Cys Ala Asp Val Arg Thr Pro Lys Met Ala Tyr Leu Ala Gly Leu His				
286	291	296	301	
gcc aac atc gcc gtg gcc aac atc gtc aac tct gtg aag cag cgg cct				1081
Ala Asn Ile Ala Val Ala Asn Ile Val Asn Ser Val Lys Gln Arg Pro				
302	307	312	317	
ctc cag gcc tac aag ccg ggt gca ctg acg ttc ctc ctg tcc atg ggg				1129
Leu Gln Ala Tyr Lys Pro Gly Ala Leu Thr Phe Leu Leu Ser Met Gly				
318	323	328	333	
aga aat gac ggt gtg ggc caa atc agt ggc ttc tat gtg ggc cgg ctc				1177
Arg Asn Asp Gly Val Gly Gln Ile Ser Gly Phe Tyr Val Gly Arg Leu				
334	339	344	349	
atg gtt cgg ctg acc aag agc cgg gac ctg ttc gtc tct acg agc tgg				1225
Met Val Arg Leu Thr Lys Ser Arg Asp Leu Phe Val Ser Thr Ser Trp				
350	355	360	365	
aaa acc atg agg cag tct cca cct tga tggag aggccaggcg ggagaactac				1277
Lys Thr Met Arg Gln Ser Pro Pro *				
366	371			
cgcagcaggt gggcgtacgg actgcttggc gcatggcacc cgcttgcaa gtgctagaac				1337
taatgctatt cttctggaat aagatgccaa tgatgtggtg gctagaaatg caacttgat				1397
aaaacaaaaa tgggagagag agaggtatta aacaaatacc ccccttaaaa aaaaaaaa				1455

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 <211> 1572
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (369)..(1418)

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cccagggccca gccacgattt gaacgctctg ccttgacgt cttctggacc gaggagccca	180
aagccctacc ctcaccattc accagggtcct gtgggaagag cagcgtggag gtgggctgag	240
gttagaaggt gcagagcgtg gaagaagatt gtgagctgag tattggacat ctgttcttga	300
atagtccctg ggccctgccat aggaaaggaa gttctccagg gttacagttc ttatccgcat	360

gaatacac atg gct ctg tta cga aaa att aat cag gtg ctg ctg ttc ctt	410
Met Ala Leu Leu Arg Lys Ile Asn Gln Val Leu Leu Phe Leu	
1 5 10	
ctg atc gtg acc ctc tgt gtg att ctg tat aaa aaa gtt cat aag ggg	458
Leu Ile Val Thr Leu Cys Val Ile Leu Tyr Lys Lys Val His Lys Gly	
15 20 25 30	
act gtg ccc aag aat gac gca gat gat gaa tcc gag act cct gaa gaa	506
Thr Val Pro Lys Asn Asp Ala Asp Asp Glu Ser Glu Thr Pro Glu Glu	
31 36 41 46	
ctg gaa gaa gag att cct gtg gtg att tgt gct gca gca ggg agg atg	554
Leu Glu Glu Glu Ile Pro Val Val Ile Cys Ala Ala Ala Gly Arg Met	
47 52 57 62	
ggt gcc act atg gct gcc atc aat agc atc tac agc aac act gac gcc	602
Gly Ala Thr Met Ala Ala Ile Asn Ser Ile Tyr Ser Asn Thr Asp Ala	
63 68 73 78	
aac atc ttg ttc tat gta gtg gga ctc cgg aat act ctg act cga ata	650
Asn Ile Leu Phe Tyr Val Val Gly Leu Arg Asn Thr Leu Thr Arg Ile	
79 84 89 94	
cga aaa tgg att gaa cat tcc aaa ctg aga gaa ata aac ttt aaa atc	698
Arg Lys Trp Ile Glu His Ser Lys Leu Arg Glu Ile Asn Phe Lys Ile	
95 100 105 110	
gtg gaa ttc aac ccg atg gtc ctc aaa ggg aag atc aga cca gac tca	746
Val Glu Phe Asn Pro Met Val Leu Lys Gly Lys Ile Arg Pro Asp Ser	
111 116 121 126	
tcg agg cct gaa ttg ctc cag cct ctg aac ttt gtt cga ttt tat ctc	794
Ser Arg Pro Glu Leu Leu Gln Pro Leu Asn Phe Val Arg Phe Tyr Leu	
127 132 137 142	
cct cta ctt atc cac caa cac gag aaa gtc atc tat ttg gac gat gat	842
Pro Leu Leu Ile His Gln His Glu Lys Val Ile Tyr Leu Asp Asp Asp	
143 148 153 158	
gta att gta caa ggt gat atc caa gaa ctg tat gac acc acc ttg gcc	890
Val Ile Val Gln Gly Asp Ile Gln Glu Leu Tyr Asp Thr Thr Leu Ala	
159 164 169 174	
ctg ggc cac gcg gcg gct ttc tca gat gac tgc gat ttg ccc tct gct	938
Leu Gly His Ala Ala Ala Phe Ser Asp Asp Cys Asp Leu Pro Ser Ala	
175 180 185 190	
cag gac ata aac aga ctc gtg gga ctt cag aac aca tat atg ggc tat	986
Gln Asp Ile Asn Arg Leu Val Gly Leu Gln Asn Thr Tyr Met Gly Tyr	
191 196 201 206	
ctg gac tac cgg aag aag gcc atc aag gac ctt ggc atc agc ccc agc	1034
Leu Asp Tyr Arg Lys Lys Ala Ile Lys Asp Leu Gly Ile Ser Pro Ser	
207 212 217 222	
acc tgc tct ttc aat cct ggt gtg att gtt gcc aac atg aca gaa tgg	1082

Thr Cys Ser Phe Asn Pro Gly Val Ile Val Ala Asn Met Thr Glu Trp	
223 228 233 238	
aag cac cag cgc atc acc aag caa ttg gag aaa tgg atg caa aag aat	1130
Lys His Gln Arg Ile Thr Lys Gln Leu Glu Lys Trp Met Gln Lys Asn	
239 244 249 254	
gtg gag gaa aac ctc tat agc agc tcc ctg gga gga ggg gtg gcc acc	1178
Val Glu Glu Asn Leu Tyr Ser Ser Ser Leu Gly Gly Gly Val Ala Thr	
255 260 265 270	
tcc cca atg ctg att gtg ttt cat ggg aaa tat tcc aca att aac ccc	1226
Ser Pro Met Leu Ile Val Phe His Gly Lys Tyr Ser Thr Ile Asn Pro	
271 276 281 286	
ctg tgg cac ata agg cac ctg ggc tgg aat cca gat gcc aga tat tcg	1274
Leu Trp His Ile Arg His Leu Gly Trp Asn Pro Asp Ala Arg Tyr Ser	
287 292 297 302	
gag cat ttt ctg cag gaa gct aaa tta ctc cac tgg aat gga aga cat	1322
Glu His Phe Leu Gln Glu Ala Lys Leu Leu His Trp Asn Gly Arg His	
303 308 313 318	
aaa cct tgg gac ttc cct agt gtt cac aac gac tta tgg gaa agc tgg	1370
Lys Pro Trp Asp Phe Pro Ser Val His Asn Asp Leu Trp Glu Ser Trp	
319 324 329 334	
ttt gtt cct gac cct gca ggg ata ttt aaa ctc aat cac cat agc tga	1418
Phe Val Pro Asp Pro Ala Gly Ile Phe Lys Leu Asn His His Ser *	
335 340 345 350	
tataactcta cccttaaaat attccctgta tagaaatgtg gaattgtccc tttgtagcca	1478
actataacat tgttctttat gaatattacc tttgatacat atgatccaca atataaaaaac	1538
caaaaactac tgtgtgcaaa ttaaaaaaaaa aaaa	1572

<210> 887
 <211> 1986
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (579) .. (1484)

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aagcgaatga ttaaaaataa gtgttgggat tatattttct ttggatttct cttttctatt	180
taaagattgc cctatcagaa tcccatcttc atttttttgt tctttctgac ataggttttc	240

aagggacatg agtgacccga ggatggcggg cggcgcgcg	ggctgcgggg ctccagggcc	300
gccccgcccc caggtgctat gctgtggggc ccgctcagag	cccacccacc tttgggttcc	360
tgttggacat cgatggagtg cttgtgcggg gccacagagt	gatccctgct gctctgaaag	420
ccttccgaag gctggtgaac tcccaggggc agctgcgggt	gcccgtgggtt tttgttacia	480
atgctgggaa catcttacia cacagcaaag cccaggagct	gtcagccctg ctgggggtgcg	540
aggtggatgc agaccaagtt atcctctctc acagcccc	atg aag ctc ttc tcc Met Lys Leu Phe Ser	593
	1	
gag tac cat gag aag cgg atg ctg gtg tct gga	cag ggg ccc gtg atg	641
Glu Tyr His Glu Lys Arg Met Leu Val Ser Gly	Gln Gly Pro Val Met	
6 11 16 21		
gaa aat gcc cag gga ctg ggc ttc cga aat gtc	gtc acc gtg gat gag	689
Glu Asn Ala Gln Gly Leu Gly Phe Arg Asn Val	Val Thr Val Asp Glu	
22 27 32 37		
ctg cgg atg gcc ttt cct ctg ctt gac atg gtg	gac ctg gag cgg cgg	737
Leu Arg Met Ala Phe Pro Leu Leu Asp Met Val	Asp Leu Glu Arg Arg	
38 43 48 53		
cta aag acc acg ccc ctc ccg agg aat gac ttc	ccc cgc att gaa ggg	785
Leu Lys Thr Thr Pro Leu Pro Arg Asn Asp Phe	Pro Arg Ile Glu Gly	
54 59 64 69		
gtg ctc ctc cta ggg gag ccg gtc cgc tgg gag	acc agc ctg cag ctg	833
Val Leu Leu Leu Gly Glu Pro Val Arg Trp Glu	Thr Ser Leu Gln Leu	
70 75 80 85		
atc atg gat gtc ctc ctc agc aat ggg agc cct	ggg gct ggc ctg gca	881
Ile Met Asp Val Leu Leu Ser Asn Gly Ser Pro	Gly Ala Gly Leu Ala	
86 91 96 101		
aca ccc ccc tac ccc cac ctc ccc gtc cta gcc	agc aac atg gat ctc	929
Thr Pro Pro Tyr Pro His Leu Pro Val Leu Ala	Ser Asn Met Asp Leu	
102 107 112 117		
ctg tgg atg gct gaa gcc aag atg ccc agg ttt	gga cat ggc acc ttt	977
Leu Trp Met Ala Glu Ala Lys Met Pro Arg Phe	Gly His Gly Thr Phe	
118 123 128 133		
ctg ctg tgc ctg gaa acc att tac cag aaa gtg	acg ggc aag gag ctg	1025
Leu Leu Cys Leu Glu Thr Ile Tyr Gln Lys Val	Thr Gly Lys Glu Leu	
134 139 144 149		
aga tac gag ggc ctg atg ggc aaa ccc agc atc	ctc act tac cag tat	1073
Arg Tyr Glu Gly Leu Met Gly Lys Pro Ser Ile	Leu Thr Tyr Gln Tyr	
150 155 160 165		
gcc gag gac ctg atc agg cga cag gcg gag agg	cgg ggc tgg gcc gcc	1121
Ala Glu Asp Leu Ile Arg Arg Gln Ala Glu Arg	Arg Gly Trp Ala Ala	

166	171	176	181	
ccc atc cgg aag ctc tat gct gtg ggt gat aac cct atg tct gac gta				1169
Pro Ile Arg Lys Leu Tyr Ala Val Gly Asp Asn Pro Met Ser Asp Val				
182	187	192	197	
tac ggc gcc aac ctg ttc cac cag tac ctg cag aag gca acg cat gat				1217
Tyr Gly Ala Asn Leu Phe His Gln Tyr Leu Gln Lys Ala Thr His Asp				
198	203	208	213	
ggg gcg cca gaa cta ggg gcc ggg ggc aca cgg cag caa cag ccc tca				1265
Gly Ala Pro Glu Leu Gly Ala Gly Gly Thr Arg Gln Gln Gln Pro Ser				
214	219	224	229	
gca agc cag agc tgc atc tcc atc ctg gtg tgt aca ggc gtc tac aat				1313
Ala Ser Gln Ser Cys Ile Ser Ile Leu Val Cys Thr Gly Val Tyr Asn				
230	235	240	245	
ccc agg aac cca cag tcc acg gag cct gtc ctt gga gga ggg gag cct				1361
Pro Arg Asn Pro Gln Ser Thr Glu Pro Val Leu Gly Gly Gly Glu Pro				
246	251	256	261	
cca ttc cac ggg cac cga gac tta tgc ttc agt cca ggg ctc atg gag				1409
Pro Phe His Gly His Arg Asp Leu Cys Phe Ser Pro Gly Leu Met Glu				
262	267	272	277	
gcc tcc cac gtg gtg aat gac gtg aat gag gct gtg cag ctg gtc ttc				1457
Ala Ser His Val Val Asn Asp Val Asn Glu Ala Val Gln Leu Val Phe				
278	283	288	293	
cgc aag gag ggc tgg gct ttg gag tga gggca gtgcggtgga ggtgaggggg				1509
Arg Lys Glu Gly Trp Ala Leu Glu *				
294	299			
tgagcctgga cctgtgggcg agtcccattg gctgggctct ggccctgatca ctgggctcag				1569
gtcagggcctt gggtcccttg ccacccttct tgetgccccca tgagtgtggc attactggtc				1629
acttgaaga agacagtgac tctttttccc tgetgggtag cattttgtat ggaacggttg				1689
gaattttctg ggcccagttc ccacgtgcct ttcgtggcag tctaacctca ggccattctc				1749
ttccccctgtg tgccctcagtg tccttctcat ttcagtaggg acttctgaaa tgggggaggc				1809
agtgtggaat actgtggatg tctgtgcaga gcctttgccg gcactgaagg catgcagcct				1869
gtcggcagag tgtcttaaca ccagatgcta ctttttactg tattgtagtt tattgcccgg				1929
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<210> 888
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 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (92)..(1156)

<400> 888

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Met Cys Gly Arg Thr Ser Cys	
1 5	
cac tta cct aga gat gtt ctc acg aga gct tgc gcc tac cag gat cgg	160
His Leu Pro Arg Asp Val Leu Thr Arg Ala Cys Ala Tyr Gln Asp Arg	
8 13 18 23	
cgg ggc cag cag cgg ctc ccg gag tgg agg gac cct gat aag tac tgc	208
Arg Gly Gln Gln Arg Leu Pro Glu Trp Arg Asp Pro Asp Lys Tyr Cys	
24 29 34 39	
ccc tct tac aac aag agt cct caa tcc aac agc cca gtg ctt ctg tct	256
Pro Ser Tyr Asn Lys Ser Pro Gln Ser Asn Ser Pro Val Leu Leu Ser	
40 45 50 55	
cga ctg cac ttt gag aag gat gca gac tca tct gag cgt atc att gct	304
Arg Leu His Phe Glu Lys Asp Ala Asp Ser Ser Glu Arg Ile Ile Ala	
56 61 66 71	
ccc atg cgc tgg ggc ttg gtc cct tct tgg ttc aaa gaa agt gat cct	352
Pro Met Arg Trp Gly Leu Val Pro Ser Trp Phe Lys Glu Ser Asp Pro	
72 77 82 87	
tcc aag ctg cag ttc aat act acc aac tgt cgt agt gat acc gta atg	400
Ser Lys Leu Gln Phe Asn Thr Thr Asn Cys Arg Ser Asp Thr Val Met	
88 93 98 103	
gag aaa cgg tca ttt aag gtg cct ctg gga aag gga aga cgc tgt gtc	448
Glu Lys Arg Ser Phe Lys Val Pro Leu Gly Lys Gly Arg Arg Cys Val	
104 109 114 119	
gtt tta gca gat gga ttc tat gag tgg cag cga tgt cag gga aca aac	496
Val Leu Ala Asp Gly Phe Tyr Glu Trp Gln Arg Cys Gln Gly Thr Asn	
120 125 130 135	
cag agg cag cca tac ttc atc tat ttt cct caa atc aag aca gag aag	544
Gln Arg Gln Pro Tyr Phe Ile Tyr Phe Pro Gln Ile Lys Thr Glu Lys	
136 141 146 151	
tca ggt agc att ggt gct gca gat agt cct gag aac tgg gag aaa gtc	592
Ser Gly Ser Ile Gly Ala Ala Asp Ser Pro Glu Asn Trp Glu Lys Val	
152 157 162 167	
tgg gac aac tgg agg ctg ctg aca atg gcc ggg atc ttt gac tgc tgg	640
Trp Asp Asn Trp Arg Leu Leu Thr Met Ala Gly Ile Phe Asp Cys Trp	
168 173 178 183	
gag ccc cca gag gga gga gat gtc ctg tat tcc tat acc atc atc aca	688

Glu Pro Pro Glu Gly Gly Asp Val Leu Tyr Ser Tyr Thr Ile Ile Thr	
184 189 194 199	
gtg gat tcc tgc aaa ggc ttg agt gac atc cac cac agg atg cct gcc	736
Val Asp Ser Cys Lys Gly Leu Ser Asp Ile His His Arg Met Pro Ala	
200 205 210 215	
ata tta gat gga gag gag gca gtt tct aaa tgg ctt gac ttt ggt gaa	784
Ile Leu Asp Gly Glu Glu Ala Val Ser Lys Trp Leu Asp Phe Gly Glu	
216 221 226 231	
gtc tca act cag gaa gct ctg aaa tta atc cac cca aca gag aac atc	832
Val Ser Thr Gln Glu Ala Leu Lys Leu Ile His Pro Thr Glu Asn Ile	
232 237 242 247	
acc ttc cat gca gtc tct tct gtg gtg aac aac tcg cga aac aac act	880
Thr Phe His Ala Val Ser Ser Val Val Asn Asn Ser Arg Asn Asn Thr	
248 253 258 263	
cct gag tgt ctg gct cct gtc gac ttg gtg gtc aaa aag gag ctc agg	928
Pro Glu Cys Leu Ala Pro Val Asp Leu Val Val Lys Lys Glu Leu Arg	
264 269 274 279	
gca agt ggc agt agc cag agg atg ttg cag tgg ttg gcc aca aag tca	976
Ala Ser Gly Ser Ser Gln Arg Met Leu Gln Trp Leu Ala Thr Lys Ser	
280 285 290 295	
ccc aaa aag gaa gac tca aaa aca cct caa aag gaa gag tca gat gtt	1024
Pro Lys Lys Glu Asp Ser Lys Thr Pro Gln Lys Glu Glu Ser Asp Val	
296 301 306 311	
ccc cag tgg tcc agt cag ttc ctg cag aag agt cca ctc ccc acc aag	1072
Pro Gln Trp Ser Ser Gln Phe Leu Gln Lys Ser Pro Leu Pro Thr Lys	
312 317 322 327	
aga ggc act gca gga ctc cta gag caa tgg ctg aag cgg gag aag gag	1120
Arg Gly Thr Ala Gly Leu Leu Glu Gln Trp Leu Lys Arg Glu Lys Glu	
328 333 338 343	
gag gaa cct gtg gcc aag cgt cct tac agc cag tga caca ggactttcag	1170
Glu Glu Pro Val Ala Lys Arg Pro Tyr Ser Gln *	
344 349 354	
agaccaaggc caggggtctgc tgcactgctg ttctgataat aggttcttaa cattgtatgt	1230
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tcctgctgct gttaccagcc atgtgggccc cataggggca ctgcgcctgc tgccctttcc	1410
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ctgatctggt actccttgta gtaagctgtt ttctgctcag ccactgggct ctttcacttt	1530
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gctgggtgggg aaagttctag atcttacttg gtttcttcta gaatcagtct tcaggaatgg	1710
attttgtcac aaatggggca tgggggcttt ctgaggaaat aactacaagt cttggtggtg	1770
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tagcttcaaa ccagcctgag tttgagtgct tgccgtagca gaaactatcc ttaccacagg	1890
tgggaaggaa aggaccagtt tctagcagtg tcggggccact cctctttcga acatccctaa	1950
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ctgcactgtg gaggcggggg cctcccttgt ggactgattt gcgtgggatt tggttgtttt	2430
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<210> 889
 <211> 1948
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (39)..(1127)

<400> 889		
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	1	
tgc ctg gag ggc ggg agg gag gcg gcg gag gaa gag ggc gag cct gag		101
Cys Leu Glu Gly Gly Arg Glu Ala Ala Glu Glu Glu Gly Glu Pro Glu		
6 11 16 21		
gtg aaa aag cgg cga ctt ctg tgt gtg gag ttt gcc tcg gtc gca agc		149
Val Lys Lys Arg Arg Leu Leu Cys Val Glu Phe Ala Ser Val Ala Ser		
22 27 32 37		

tgc gat gcc gca gtg gct cag tgc ttc ctg gcc gag aac gac tgg gag	197
Cys Asp Ala Ala Val Ala Gln Cys Phe Leu Ala Glu Asn Asp Trp Glu	
38 43 48 53	
atg gaa agg gct ctg aac tcc tac ttc gag cct ccg gtg gag gag agc	245
Met Glu Arg Ala Leu Asn Ser Tyr Phe Glu Pro Pro Val Glu Glu Ser	
54 59 64 69	
gcc ttg gaa cgc cga cct gaa acc atc tct gag ccc aag acc tat gtt	293
Ala Leu Glu Arg Arg Pro Glu Thr Ile Ser Glu Pro Lys Thr Tyr Val	
70 75 80 85	
gac cta acc aat gaa gaa aca act gat tcc acc act tct aaa atc agc	341
Asp Leu Thr Asn Glu Glu Thr Thr Asp Ser Thr Thr Ser Lys Ile Ser	
86 91 96 101	
cca tct gaa gat act cag caa gaa aat ggc agc atg ttc tct ctc att	389
Pro Ser Glu Asp Thr Gln Gln Glu Asn Gly Ser Met Phe Ser Leu Ile	
102 107 112 117	
acc tgg aat att gat gga tta gat cta aac aat ctg tca gag agg gct	437
Thr Trp Asn Ile Asp Gly Leu Asp Leu Asn Asn Leu Ser Glu Arg Ala	
118 123 128 133	
cga ggg gtg tgt tcc tac tta gct ttg tac agc cca gat gtg ata ttt	485
Arg Gly Val Cys Ser Tyr Leu Ala Leu Tyr Ser Pro Asp Val Ile Phe	
134 139 144 149	
cta cag gaa gtt att ccc cca tat tat agc tac cta aag aag aga tca	533
Leu Gln Glu Val Ile Pro Pro Tyr Tyr Ser Tyr Leu Lys Lys Arg Ser	
150 155 160 165	
agt aat tat gag att att aca ggt cat gaa gaa gga tat ttc aca gct	581
Ser Asn Tyr Glu Ile Ile Thr Gly His Glu Glu Gly Tyr Phe Thr Ala	
166 171 176 181	
ata atg ttg aag aaa tca aga gtg aaa tta aaa agc caa gag att att	629
Ile Met Leu Lys Lys Ser Arg Val Lys Leu Lys Ser Gln Glu Ile Ile	
182 187 192 197	
cct ttt cca agt acc aaa atg atg aga aac ctt tta tgt gtg cat gtg	677
Pro Phe Pro Ser Thr Lys Met Met Arg Asn Leu Leu Cys Val His Val	
198 203 208 213	
aat gtg tca gga aat gag ctt tgc ctt atg aca tcc cat ttg gag agc	725
Asn Val Ser Gly Asn Glu Leu Cys Leu Met Thr Ser His Leu Glu Ser	
214 219 224 229	
acc aga ggg cat gct gcg gaa cga atg aat cag tta aaa atg gtt tta	773
Thr Arg Gly His Ala Ala Glu Arg Met Asn Gln Leu Lys Met Val Leu	
230 235 240 245	
aag aaa atg caa gag gct cca gag tca gct aca gtt ata ttt gca gga	821
Lys Lys Met Gln Glu Ala Pro Glu Ser Ala Thr Val Ile Phe Ala Gly	
246 251 256 261	
gat aca aat cta agg gat cga gag gtt acc aga tgt ggt ggt tta ccc	869

Asp Thr Asn Leu Arg	Asp Arg Glu Val Thr Arg Cys Gly Gly Leu Pro	
262	267 272 277	
aac aac att gtg gat gtc tgg gag ttt ttg ggc aaa cct aaa cat tgc		917
Asn Asn Ile Val Asp Val Trp Glu Phe Leu Gly Lys Pro Lys His Cys		
278	283 288 293	
cag tat aca tgg gat aca caa atg aac tct aat ctt gga ata act gct		965
Gln Tyr Thr Trp Asp Thr Gln Met Asn Ser Asn Leu Gly Ile Thr Ala		
294	299 304 309	
gct tgt aaa ctt cgt ttt gat cga ata ttt ttc aga gca gca gca gaa		1013
Ala Cys Lys Leu Arg Phe Asp Arg Ile Phe Phe Arg Ala Ala Ala Glu		
310	315 320 325	
gag gga cac att att ccc cga agt ttg gac ctt ctt gga tta gaa aaa		1061
Glu Gly His Ile Ile Pro Arg Ser Leu Asp Leu Leu Gly Leu Glu Lys		
326	331 336 341	
ctg gac tgt ggt aga ttt cct agt gat cac tgg ggt ctt ctg tgc aac		1109
Leu Asp Cys Gly Arg Phe Pro Ser Asp His Trp Gly Leu Leu Cys Asn		
342	347 352 357	
tta gat ata ata ttg taa aatgct tttcaagtgt gggttttgcc ctgattgttg		1163
Leu Asp Ile Ile Leu *		
358	363	
caaatacaat ttccaccttc tggaaaggta ggtttgctgt ggaggaaata atgtactaga		1223
tcattgtcac agaaaaacca actatgattt atgggtgtgt tttcagaatt caacattaaa		1283
gattaatgtt tatttaaacg aacacattcc tgcattcagg atgtgaggcc atttaataaa		1343
aagggcacaa agcctgtcag agttttcaac ggtgcttata gctgccagct ggattccaaa		1403
caggtacccc attgtctctg agctaattgtt tatatttttc cattcaggca ccgaaatagt		1463
taatatttaa aataagtctt caaaagaaaa cataagagat tattgagttc ttgggactgg		1523
atcctttatt tcataagttc agatcatctt aaatgaaaat gccatgatta tctgcagtta		1583
agtagatgac agctattcta catcagactt gatttttgtc agctaattac ataattggta		1643
agctataatt gaaaccttat ggcttaaaat tccttaactc ctttttgatt catgtttgta		1703
gtcatgttgt caacagaggc aaagttaagc ttgatgatgg ttaaaatcgg tttgatagca		1763
ccatgggaca tttttctaac aaaaataaat gcatgaagag acatagcctt ttagttttgc		1823
taattgtgaa atggaaatgc tttacaggaa gtaaatacaa attactttta agtgtgcttt		1883
aaagaaaaat attttcccca caagagaaat ttaaataaag aattttatatt gttaaaaaaa		1943
aaaaa	/	1948

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 <213> Homo sapiens

<220>
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 <222> (1)..(297)

<400> 890

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 Met Asp Cys Cys Ala Ser Arg Gly Cys Ser Val Pro Thr Gly Pro Ala
 1 5 10

acc acc atc tgc tcc tct gac aaa tcc tgc cgc tgt gga gtc tgc ctg 96
 Thr Thr Ile Cys Ser Ser Asp Lys Ser Cys Arg Cys Gly Val Cys Leu
 17 22 27 32

ccc agc acc tgc cca cac aca gtt tgg tta ctg gag ccc acc tgc tgt 144
 Pro Ser Thr Cys Pro His Thr Val Trp Leu Leu Glu Pro Thr Cys Cys
 33 38 43 48

gac aac tgt ccc cca ccc tgc cac att cct cag ccc tgc gtg ccc acc 192
 Asp Asn Cys Pro Pro Pro Cys His Ile Pro Gln Pro Cys Val Pro Thr
 49 54 59 64

tgc ttc ctg ctc aac tcc tgc cag cca act cca ggc ctg gag acc ctc 240
 Cys Phe Leu Leu Asn Ser Cys Gln Pro Thr Pro Gly Leu Glu Thr Leu
 65 70 75 80

aac ctc acc acc ttc act cag ccc tgc tgt gag ccc tgc ctc cca aga 288
 Asn Leu Thr Thr Phe Thr Gln Pro Cys Cys Glu Pro Cys Leu Pro Arg
 81 86 91 96

ggc tgc taa tggatgg ctactttgct cagtgcctga gattgaaaaa gtcaacatag 344
 Gly Cys *
 97

aagcttttagc attcacctat ctcaagtacct acaactaatg tactctgctt tagaaattgg 404

aacaaggatg gag 417

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 <211> 2290
 <212> DNA
 <213> Homo sapiens

<220>
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ctttgccccca atcttgtgtg ggcactgaag ggggactaca ggttcgagat acttcctcgc 120

gtattgctaa aggaggagtt gaccacacca aa atg agt cta cat ggt gct agt 173
Met Ser Leu His Gly Ala Ser
1 5

ggg gga cat gag aga tca aga gat aga cga agg tca agt gac aga tca 221
Gly Gly His Glu Arg Ser Arg Asp Arg Arg Arg Ser Ser Asp Arg Ser
8 13 18 23

cga gat tca tct cat gaa aga acg gag tct cag ctc act cct tgt att 269
Arg Asp Ser Ser His Glu Arg Thr Glu Ser Gln Leu Thr Pro Cys Ile
24 29 34 39

aga aat gtg act tct cca aca cga cag cac cat gtt gaa cga gaa aaa 317
Arg Asn Val Thr Ser Pro Thr Arg Gln His His Val Glu Arg Glu Lys
40 45 50 55

gat cac agt tcc tct cgt cca agc agt ccg cgt cct caa aaa gca tcc 365
Asp His Ser Ser Ser Arg Pro Ser Ser Pro Arg Pro Gln Lys Ala Ser
56 61 66 71

cca aat ggt tcc att agc agt gct ggg aac agc agc aga aac agt agt 413
Pro Asn Gly Ser Ile Ser Ser Ala Gly Asn Ser Ser Arg Asn Ser Ser
72 77 82 87

cag tca agt tca gat ggt agc tgt aag aca gct ggg gag atg gtg ttt 461
Gln Ser Ser Ser Asp Gly Ser Cys Lys Thr Ala Gly Glu Met Val Phe
88 93 98 103

gta tat gaa aat gca aaa gaa gga gct cgg aat ata aga acg tca gaa 509
Val Tyr Glu Asn Ala Lys Glu Gly Ala Arg Asn Ile Arg Thr Ser Glu
104 109 114 119

cga gtg aca cta ata gtg gat aac act aga ttt gtt gta gac cca tcc 557
Arg Val Thr Leu Ile Val Asp Asn Thr Arg Phe Val Val Asp Pro Ser
120 125 130 135

att ttt act gca cag cca aat aca atg ttg ggc agg atg ttt gga tct 605
Ile Phe Thr Ala Gln Pro Asn Thr Met Leu Gly Arg Met Phe Gly Ser
136 141 146 151

ggc cga gaa cat aac ttt aca cga ccc aat gag aaa gga gag tat gag 653
Gly Arg Glu His Asn Phe Thr Arg Pro Asn Glu Lys Gly Glu Tyr Glu
152 157 162 167

gtg gca gag gga att ggt tcc act gtg ttt cga gcg att ctg gat tac 701
Val Ala Glu Gly Ile Gly Ser Thr Val Phe Arg Ala Ile Leu Asp Tyr
168 173 178 183

tat aaa aca gga ata atc cgt tgt cct gat ggc ata tct att cct gaa 749
Tyr Lys Thr Gly Ile Ile Arg Cys Pro Asp Gly Ile Ser Ile Pro Glu
184 189 194 199

ctg aga gaa gca tgt gac tat ctt tgt atc tct ttt gaa tat agc act 797
Leu Arg Glu Ala Cys Asp Tyr Leu Cys Ile Ser Phe Glu Tyr Ser Thr

200	205	210	215	
att aaa tgt aga gat	ctc agt gcc cta atg	cat gag tta tca aat	gat	845
Ile Lys Cys Arg Asp	Leu Ser Ala Leu Met	His Glu Leu Ser Asn	Asp	
216	221	226	231	
ggt gct cgt aga caa	ttt gaa ttt tat ctg	gaa gaa atg atc ctc	cct	893
Gly Ala Arg Arg Gln	Phe Glu Phe Tyr Leu	Glu Glu Met Ile Leu	Pro	
232	237	242	247	
ctc atg gta gct agt	gcc cag agt ggg gaa	cgg gaa tgt cat ata	gtg	941
Leu Met Val Ala Ser	Ala Gln Ser Gly Glu	Arg Glu Cys His Ile	Val	
248	253	258	263	
gtg ctt aca gat gat	gat gtg gtt gat tgg	gat gaa gaa tat cca	cca	989
Val Leu Thr Asp Asp	Asp Val Val Asp Trp	Asp Glu Glu Tyr Pro	Pro	
264	269	274	279	
cag atg gga gaa gaa	tat tca caa att att	tat agc aca aaa tta	tat	1037
Gln Met Gly Glu Glu	Tyr Ser Gln Ile Ile	Tyr Ser Thr Lys Leu	Tyr	
280	285	290	295	
aga ttt ttc aag tat	att gaa aac aga gat	gtg gcc aag tca gtt	ttg	1085
Arg Phe Phe Lys Tyr	Ile Glu Asn Arg Asp	Val Ala Lys Ser Val	Leu	
296	301	306	311	
aag gag agg ggt ctt	aag aag att aga ttg	gga ata gaa ggt tat	cct	1133
Lys Glu Arg Gly Leu	Lys Lys Ile Arg Leu	Gly Ile Glu Gly Tyr	Pro	
312	317	322	327	
acc tac aaa gaa aaa	gta aag aaa agg cct	gga ggc cgc cca gaa	gtg	1181
Thr Tyr Lys Glu Lys	Val Lys Lys Arg Pro	Gly Gly Arg Pro Glu	Val	
328	333	338	343	
atc tac aac tat gtc	caa aga ccc ttt att	cga atg tcc tgg gag	aag	1229
Ile Tyr Asn Tyr Val	Gln Arg Pro Phe Ile	Arg Met Ser Trp Glu	Lys	
344	349	354	359	
gaa gaa gga aag agt	cgg cat gta gac ttt	cag tgt gta aag agt	aaa	1277
Glu Glu Gly Lys Ser	Arg His Val Asp Phe	Gln Cys Val Lys Ser	Lys	
360	365	370	375	
tct atc acc aat ctt	gca gca gct gca gca	gac att ccc cag gac	cag	1325
Ser Ile Thr Asn Leu	Ala Ala Ala Ala Ala	Asp Ile Pro Gln Asp	Gln	
376	381	386	391	
ctg gta gtc atg cat	cca act cca caa gtg	gat gag ctg gat att	ctc	1373
Leu Val Val Met His	Pro Thr Pro Gln Val	Asp Glu Leu Asp Ile	Leu	
392	397	402	407	
cct atc cat ccc cct	tct ggc aac agt gac	ctc gat cct gat gca	cag	1421
Pro Ile His Pro Pro	Ser Gly Asn Ser Asp	Leu Asp Pro Asp Ala	Gln	
408	413	418	423	
aat cca atg ctg tga	tgctgatctt ccttgaaacc	atagcatgct actcttcaca		1476
Asn Pro Met Leu *				
424				

gtgacgttgt actctcctca ttctgcaact caaggccact cttcttcatt gtgagatgca 1536
cataacaatg tttaggatat tgcagtgtag gcttttttaa agaccaaagg tagctgaatg 1596
gttttttttt aaatgagtac aactctagca ttttgaagtt ccagttgtaa atgtatttgt 1656
ttaccagtag gtttgtgaaa ttggttcttt gtatggggga tggtcctttt tcacacagct 1716
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catcacacct cagataaaat gcagagtaat atatagttgc actttataaa tgggtggttaa 1836
atggaaatgt tcaagccatt ttatagttgt gatgcacaat ataatttaag tgcttctgtc 1896
aaagtattcc tccagtacaa tttgtatagt ttgctgccct tgatgagcaa aaagtattta 1956
tcttgggctt atctaaatga tcacgatgag atttaatgcc catatcttac cagttcagta 2016
atctccagag ccatttcacc ctttagagtg agtcacatgc agggagtgtg aatgtcagag 2076
gtggtttatt atccagtctg ccttaccctt aatctgttca cagatattta tttactaatg 2136
cctttctttc taaagagtta tgggatagga aaatgaaagt gtttgctcct catttactaa 2196
atgatcgtaa acttgacgtt ctcatcaaa tataattccc cttctgtcga attactggcc 2256
tcgagggccca attcctatat gagtcgtatt aatt 2290

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<211> 1265
<212> DNA
<213> Homo sapiens

<220>
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<222> (193)..(1134)

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cgatttcgta ggaaggagag ttcttcttcc aggtggtttc ctgcagactg cctgctaggg 120
ctcagaggac cagcttcttc cctgctgtct cctgagccca gtccctcttg gccatcacat 180
tccccttgcc ct atg gcg gcc ctc aca gac ctc tca ttt atg tat cgc 228
Met Ala Ala Leu Thr Asp Leu Ser Phe Met Tyr Arg
1 5 10
tgg ttc aag aac tgc aat ctg gtt ggc aac ctc tca gag aag tac gtc 276
Trp Phe Lys Asn Cys Asn Leu Val Gly Asn Leu Ser Glu Lys Tyr Val
13 18 23 28
ttc atc aca ggc tgt gac tct ggc ttc ggg aac ctg ctg gcc aaa cag 324

Phe Ile Thr Gly Cys Asp Ser Gly Phe Gly Asn Leu Leu Ala Lys Gln	
29 34 39 44	
ctg gtt gat cgg ggc atg cag gtg ctg gct gct tgc ttc act gag gag	372
Leu Val Asp Arg Gly Met Gln Val Leu Ala Ala Cys Phe Thr Glu Glu	
45 50 55 60	
gga tcc cag aaa ctt cag cgg gat acc tcc tat cgg ctg cag acc acc	420
Gly Ser Gln Lys Leu Gln Arg Asp Thr Ser Tyr Arg Leu Gln Thr Thr	
61 66 71 76	
cta ctg gat gtc acc aag agc gaa agc atc aag gcg gcg gcc cag tgg	468
Leu Leu Asp Val Thr Lys Ser Glu Ser Ile Lys Ala Ala Ala Gln Trp	
77 82 87 92	
gtg agg gac aaa gtg ggc gaa caa ggc ctc tgg gcc ctg gtg aac aat	516
Val Arg Asp Lys Val Gly Glu Gln Gly Leu Trp Ala Leu Val Asn Asn	
93 98 103 108	
gct ggt gtg ggc ctg ccc agt ggt ccc aac gaa tgg ctg acc aag gat	564
Ala Gly Val Gly Leu Pro Ser Gly Pro Asn Glu Trp Leu Thr Lys Asp	
109 114 119 124	
gac ttt gtg aag gtg att aat gtg aac ctg gtg gga ctg atc gaa gtg	612
Asp Phe Val Lys Val Ile Asn Val Asn Leu Val Gly Leu Ile Glu Val	
125 130 135 140	
acc ctt cac atg ctg ccc atg gtc aag aga gcc cgg ggc agg gtt gtc	660
Thr Leu His Met Leu Pro Met Val Lys Arg Ala Arg Gly Arg Val Val	
141 146 151 156	
aac atg tcc agc tct ggt ggt cgt gtg gct gtc att ggt ggt ggc tac	708
Asn Met Ser Ser Ser Gly Gly Arg Val Ala Val Ile Gly Gly Gly Tyr	
157 162 167 172	
tgc gtc tcc aag ttt ggc gtt gag gcc ttc tct gac agc ata agg cgt	756
Cys Val Ser Lys Phe Gly Val Glu Ala Phe Ser Asp Ser Ile Arg Arg	
173 178 183 188	
gag ctc tac tac ttt ggg gtg aaa gtc tgc atc att gag cca ggg aac	804
Glu Leu Tyr Tyr Phe Gly Val Lys Val Cys Ile Ile Glu Pro Gly Asn	
189 194 199 204	
tat cgg aca gcc att ctc ggc aag gag aac ctg gag tca cgc atg cga	852
Tyr Arg Thr Ala Ile Leu Gly Lys Glu Asn Leu Glu Ser Arg Met Arg	
205 210 215 220	
aag ctt tgg gag agg ctg cct cag gag acc cgg gac agc tac gga gag	900
Lys Leu Trp Glu Arg Leu Pro Gln Glu Thr Arg Asp Ser Tyr Gly Glu	
221 226 231 236	
gat tat ttc cgc atc tat act gac aag tta aaa aac ata atg cag gtg	948
Asp Tyr Phe Arg Ile Tyr Thr Asp Lys Leu Lys Asn Ile Met Gln Val	
237 242 247 252	
gca gag ccc aga gtc aga gat gtc atc aac agc atg gag cat gct att	996
Ala Glu Pro Arg Val Arg Asp Val Ile Asn Ser Met Glu His Ala Ile	

253	258	263	268	
gtt tcc cgg agc cct cgc atc cgc tac aac cct ggc ctg gat gcc aaa				1044
Val Ser Arg Ser Pro Arg Ile Arg Tyr Asn Pro Gly Leu Asp Ala Lys				
269	274	279	284	
ctc ctc tac atc cct ctg gct aag ttg ccc acc cct gtg aca gat ttc				1092
Leu Leu Tyr Ile Pro Leu Ala Lys Leu Pro Thr Pro Val Thr Asp Phe				
285	290	295	300	
atc cta agc cgg tac ctt cca agg cca gcg gac agt gtc taa actgggg				1141
Ile Leu Ser Arg Tyr Leu Pro Arg Pro Ala Asp Ser Val *				
301	306	311		
aggatcaatg gggtcagtga gcctagaagt gggggaggaa ggaaggaccg tggggtcaca				1201
aaaggtggta tcggttatcc tgggggcatt ggctgcaaag gaagcttggc tcacttgaca				1261
ccca				1265

<210> 893
 <211> 4531
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (1)..(1707)

<400> 893

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1 5 10	

agg gtg gtg ctg aca ctg aag gag aag att gac atc tgc acg cgc ctg	96
Arg Val Val Leu Thr Leu Lys Glu Lys Ile Asp Ile Cys Thr Arg Leu	
17 22 27 32	

gag aag ggc gag agc cgg aag gca ctg atg cag gag tac aat gtg ggc	144
Glu Lys Gly Glu Ser Arg Lys Ala Leu Met Gln Glu Tyr Asn Val Gly	
33 38 43 48	

atg tcc acc ctc tac gac atc agg gcc cac aag gcg cag ctg ctc cgg	192
Met Ser Thr Leu Tyr Asp Ile Arg Ala His Lys Ala Gln Leu Leu Arg	
49 54 59 64	

ttc ttc gcc agc tcc gac tcc aac aag gcg ctg gag cag cgg cgc acg	240
Phe Phe Ala Ser Ser Asp Ser Asn Lys Ala Leu Glu Gln Arg Arg Thr	
65 70 75 80	

ctg cac acg ccc aag ctg gag cac ctg gac cgc gtc ctg tac gag tgg	288
Leu His Thr Pro Lys Leu Glu His Leu Asp Arg Val Leu Tyr Glu Trp	
81 86 91 96	

ttc ctg ggg aag cgc tcc gag ggc gtc ccc gtg tca ggc ccc atg ctc	336
Phe Leu Gly Lys Arg Ser Glu Gly Val Pro Val Ser Gly Pro Met Leu	
97 102 107 112	
atc gag aag gcc aag gac ttt tac gag cag atg cag ctc act gag ccc	384
Ile Glu Lys Ala Lys Asp Phe Tyr Glu Gln Met Gln Leu Thr Glu Pro	
113 118 123 128	
tgc gtg ttc tcc gga ggg tgg ctt tgg cgc ttt aag gcc aga cac ggc	432
Cys Val Phe Ser Gly Gly Trp Leu Trp Arg Phe Lys Ala Arg His Gly	
129 134 139 144	
att aaa aag cta gat gca tcc agt gaa aag cag tca gcc gac cac cag	480
Ile Lys Lys Leu Asp Ala Ser Ser Glu Lys Gln Ser Ala Asp His Gln	
145 150 155 160	
gcc gcg gag cag ttc tgt gcg ttt ttc agg agc ttg gct gct gag cac	528
Ala Ala Glu Gln Phe Cys Ala Phe Phe Arg Ser Leu Ala Ala Glu His	
161 166 171 176	
ggg ctg tcc gcc gag cag gtt tac aac gct gat gag acc ggc ctt ttc	576
Gly Leu Ser Ala Glu Gln Val Tyr Asn Ala Asp Glu Thr Gly Leu Phe	
177 182 187 192	
tgg cgg tgc ctg cca aat ccc act ccg gaa ggc ggg gct gtg cct ggc	624
Trp Arg Cys Leu Pro Asn Pro Thr Pro Glu Gly Gly Ala Val Pro Gly	
193 198 203 208	
ccc aag cag ggc aag gac cgg ctg acc gtg ctg atg tgt gcc aac gcc	672
Pro Lys Gln Gly Lys Asp Arg Leu Thr Val Leu Met Cys Ala Asn Ala	
209 214 219 224	
acg ggc tcc cac agg ctc aag ccc ttg gcc atc ggg aag tgc agc ggt	720
Thr Gly Ser His Arg Leu Lys Pro Leu Ala Ile Gly Lys Cys Ser Gly	
225 230 235 240	
ccc agg gct ttc aaa ggc atc cag cac ctg ccc gtc gcc tat aag gcc	768
Pro Arg Ala Phe Lys Gly Ile Gln His Leu Pro Val Ala Tyr Lys Ala	
241 246 251 256	
cag ggg aac gcc tgg gtg gac aag gag att ttt tcc gat tgg ttc cat	816
Gln Gly Asn Ala Trp Val Asp Lys Glu Ile Phe Ser Asp Trp Phe His	
257 262 267 272	
cat atc ttt gtg ccc tcg gtg aga gag cac ttc aga acc ata ggt ttg	864
His Ile Phe Val Pro Ser Val Arg Glu His Phe Arg Thr Ile Gly Leu	
273 278 283 288	
ccg gaa gac agc aaa gcc gtt ctc ttg ctg gac agc tcc cgg gct cac	912
Pro Glu Asp Ser Lys Ala Val Leu Leu Leu Asp Ser Ser Arg Ala His	
289 294 299 304	
ccg cag gag gcc gag ctg gtg tcc agt aac gtt ttc acc atc ttc ctg	960
Pro Gln Glu Ala Glu Leu Val Ser Ser Asn Val Phe Thr Ile Phe Leu	
305 310 315 320	
cct gcc agc gtg gcc tca ttg gtg cag ccc atg gag cag ggc att cgg	1008

Pro Ala Ser Val Ala Ser Leu Val Gln Pro Met Glu Gln Gly Ile Arg	
321 326 331 336	
aga gat ttc atg agg aac ttc att aac cct ccg gtc ccc ctg cag ggc	1056
Arg Asp Phe Met Arg Asn Phe Ile Asn Pro Pro Val Pro Leu Gln Gly	
337 342 347 352	
ccc cac gcc cgc tac aac atg aac gat gcc ata ttc agc gtg gcc tgt	1104
Pro His Ala Arg Tyr Asn Met Asn Asp Ala Ile Phe Ser Val Ala Cys	
353 358 363 368	
gcc tgg aac gca gtc cct agc cac gtc ttc agg cgg gcc tgg agg aag	1152
Ala Trp Asn Ala Val Pro Ser His Val Phe Arg Arg Ala Trp Arg Lys	
369 374 379 384	
ctg tgg ccg tcg gtt gcg ttt gcc gaa ggc tcc tcc tct gag gag gag	1200
Leu Trp Pro Ser Val Ala Phe Ala Glu Gly Ser Ser Ser Glu Glu Glu	
385 390 395 400	
ttg gag gca gag tgc ttc cca gtg aag ccc cac aac aag tcc ttt gca	1248
Leu Glu Ala Glu Cys Phe Pro Val Lys Pro His Asn Lys Ser Phe Ala	
401 406 411 416	
cac atc ctg gag ctt gtg aag gaa ggc tcc tcc tgc ccg ggc cag ctt	1296
His Ile Leu Glu Leu Val Lys Glu Gly Ser Ser Cys Pro Gly Gln Leu	
417 422 427 432	
cgc cag cgc cag gcc gcc agc tgg ggg gta gcg gga agg gag gca gaa	1344
Arg Gln Arg Gln Ala Ala Ser Trp Gly Val Ala Gly Arg Glu Ala Glu	
433 438 443 448	
ggg gga cgg ccc cct gct gcc acg tcg cca gca gag gtt gtg tgg agt	1392
Gly Gly Arg Pro Pro Ala Ala Thr Ser Pro Ala Glu Val Val Trp Ser	
449 454 459 464	
tca gaa aag act ccg aaa gct gac cag gac ggc aga gga gat cct ggt	1440
Ser Glu Lys Thr Pro Lys Ala Asp Gln Asp Gly Arg Gly Asp Pro Gly	
465 470 475 480	
gag ggc gag gag gtg gcc tgg gag cag gcg gcc gtg gcc ttt gac gca	1488
Glu Gly Glu Glu Val Ala Trp Glu Gln Ala Ala Val Ala Phe Asp Ala	
481 486 491 496	
gtc ctg cgc ttt gcg gag cgg cag cca tgc ttc agt gcg cag gaa gtg	1536
Val Leu Arg Phe Ala Glu Arg Gln Pro Cys Phe Ser Ala Gln Glu Val	
497 502 507 512	
ggg cag ctg cgg gcg ctg cgt gcc gtg ttc cgg agc cag cag cag gtg	1584
Gly Gln Leu Arg Ala Leu Arg Ala Val Phe Arg Ser Gln Gln Gln Val	
513 518 523 528	
agg agg cgg cgt ggt gcc ctc ggg gct gtg gtc aag gtt gaa gcc ctc	1632
Arg Arg Arg Arg Gly Ala Leu Gly Ala Val Val Lys Val Glu Ala Leu	
529 534 539/ 544	
cag gag ggc cct ggt gcc tgt ggg gcc aca gct cag tct ccc ttg ccc	1680
Gln Glu Gly Pro Gly Gly Cys Gly Ala Thr Ala Gln Ser Pro Leu Pro	

545	550	555	560	
tgc tca tcc aca gca ggt gac aac tga tggct tctctgccct gccctggcca				1732
Cys Ser Ser Thr Ala Gly Asp Asn *				
561	566			
ctggccctgt ttctcccaca ccctggagtg gcatggtcct gtgccccgac cccacctgag				1792
gcaggagggc atgtgcagac actcaagagc ccttcaggga gtgggtcgcc cacgggtgtg				1852
gctcgggtgc ccaggacggc ctgtgcccga ggttcctgtc aatacagggt ttattttatc				1912
acttgccgtg tcatccgaaa gtgaggaaat gttttggaag ggtccaccct agcctagaac				1972
aagccagagc cgcaccctgg ctggaatggg ggccaggctg agccgatctg gtctcgtgtt				2032
cgctggctga tcattgcagt atcagagggt ggagatgtca gtctgtccac gtggagagaa				2092
gttgccctcc aggccgacag gaggccatgc ccaccgcccc tggacaggct tcgtctcaga				2152
aggctctatc tgctgggctg gcggccatcc ccgtgttggg tggaccccga gcacggttgc				2212
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<222> (1478) .. (2695)

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gga ggc cac ctg cgg atg gtg gag gcc aac agc cgg ggc gtg gtg tgg	1543
Gly Gly His Leu Arg Met Val Glu Ala Asn Ser Arg Gly Val Val Trp	
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ggc atc ggc tat gac cac acg gcc tgg gta tac aca ggc ggc tat gga	1591
Gly Ile Gly Tyr Asp His Thr Ala Trp Val Tyr Thr Gly Gly Tyr Gly	

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Gln Ser Asp Val Lys Cys Val His Ile Tyr Glu Asn Gln Arg Trp Asn				
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Phe Pro Ala Ser Tyr His Gly Ser Lys Thr Met Lys Asp Phe Val Arg				
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Pro Ala Gly Ser Ser Trp Leu His Val Gly Thr Asp Gln Pro Phe Ala				
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Ser Ile Ser Ile Gly Ala Cys Tyr Gln Val Trp Ala Val Ala Arg Asp				
231 236 241 246				
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Asp Cys Trp Tyr His Ile Pro Ser Pro Pro Arg Gln Arg Leu Lys Gln	
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Val Ser Ala Gly Gln Thr Ser Val Tyr Ala Leu Asp Glu Asn Gly Asn	
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Trp Glu His Val Ser Asn Asn Val Cys Arg Val Ser Val Gly Pro Leu	
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Asp Gln Val Trp Val Ile Ala Asn Lys Val Gln Gly Ser His Ser Leu	
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Lys Gly His Gly Trp Asp Tyr Gly Ile Gly Gly Gly Trp Asp His Ile	
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375 380 385 390	
cag gag ccg agt gcc cca cca gag gcc cat ggc ccc gtc tgc tgc tga	2695
Gln Glu Pro Ser Ala Pro Pro Glu Ala His Gly Pro Val Cys Cys *	
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<213> Homo sapiens

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<222> (65)..(988)

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Met Arg Gly Cys Gln Leu Leu Gly Leu Arg Ser Ser Trp Pro Gly
1 5 10

gac cta cta agt gct cgg ctc ttg tcc caa gag aag cgg gca gcg gaa 157
Asp Leu Leu Ser Ala Arg Leu Leu Ser Gln Glu Lys Arg Ala Ala Glu
16 21 26 31

acg cac ttt ggg ttt gag act gtg tgc gaa gag gag aag ggg ggc aaa 205
Thr His Phe Gly Phe Glu Thr Val Ser Glu Glu Glu Lys Gly Gly Lys
32 37 42 47

gtc tat cag gtg ttt gaa agt gtg gct aag aag tat gat gtg atg aat 253
Val Tyr Gln Val Phe Glu Ser Val Ala Lys Lys Tyr Asp Val Met Asn
48 53 58 63

gat atg atg agt ctt ggt atc cat cgt gtt tgg aag gat ttg ctg ctc 301
Asp Met Met Ser Leu Gly Ile His Arg Val Trp Lys Asp Leu Leu Leu
64 69 74 79

tgg aag atg cac ccg ctt cct ggg acc cag ctg ctt gat gtt gct gga 349
Trp Lys Met His Pro Leu Pro Gly Thr Gln Leu Leu Asp Val Ala Gly
80 85 90 95

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ttgttgcaa tgctatttt ttggctttcc cccgcgttct ctaaactaac tatttaaagg 240
tctgcggctg caaatggttt gactaaacgt agg atg gga ctt aag ttg aac ggc 294
          Met Gly Leu Lys Leu Asn Gly
          1                      5

aga tat att tca ctg atc ctc gcg gtg caa ata gcg tat ctg gtg cag 342
Arg Tyr Ile Ser Leu Ile Leu Ala Val Gln Ile Ala Tyr Leu Val Gln
  8              13              18              23

gcc gtg aga gca gcg ggc aag tgc gat gcg gtc ttc aag ggc ttt tcg 390
Ala Val Arg Ala Ala Gly Lys Cys Asp Ala Val Phe Lys Gly Phe Ser
 24              29              34              39

gac tgt ttg ctc aag ctg ggc gac agc atg gcc aac tac ccg cag ggc 438
Asp Cys Leu Leu Lys Leu Gly Asp Ser Met Ala Asn Tyr Pro Gln Gly
 40              45              50 |              55

ctg gac gac aag acg aac atc aag acc gtg tgc aca tac tgg gag gat 486
Leu Asp Asp Lys Thr Asn Ile Lys Thr Val Cys Thr Tyr Trp Glu Asp
 56              61              66              71

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Phe His Ser Cys Thr Val Thr Ala Leu Thr Asp Cys Gln Glu Gly Ala	
72 77 82 87	
aaa gat atg tgg gat aaa ctg aga aaa gaa tcc aaa aac ctc aac atc	582
Lys Asp Met Trp Asp Lys Leu Arg Lys Glu Ser Lys Asn Leu Asn Ile	
88 93 98 103	
caa ggc agc tta ttc gaa ctc tgc ggc agc ggc aac ggg gcg gcg ggg	630
Gln Gly Ser Leu Phe Glu Leu Cys Gly Ser Gly Asn Gly Ala Ala Gly	
104 109 114 119	
tcc ctg ctc ccg gcg ttc ccg gtg ctc ctg gtg tct ctc tcg gca gct	678
Ser Leu Leu Pro Ala Phe Pro Val Leu Leu Val Ser Leu Ser Ala Ala	
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Leu Ala Thr Trp Leu Ser Phe *	
136 141	
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Gly Val Leu Phe Ala Ile Cys Phe Ser Cys Leu Ala Ala His Val Phe				
124	129	134	139	
gcc ctc aac ttc ctg gcc cgg aag aac cac ggg ccc cgg ggc tgg gtg				602
Ala Leu Asn Phe Leu Ala Arg Lys Asn His Gly Pro Arg Gly Trp Val				
140	145	150	155	
atc ttc act gtg gct ctg ctg ctg acc ctg gta gag gtc atc atc aat				650
Ile Phe Thr Val Ala Leu Leu Leu Thr Leu Val Glu Val Ile Ile Asn				
156	161	166	171	
aca gag tgg ctg atc atc acc ctg gtt cgg ggc agt ggc gag ggc ggc				698
Thr Glu Trp Leu Ile Ile Thr Leu Val Arg Gly Ser Gly Glu Gly Gly				
172	177	182	187	
cct cag ggc aac agc agc gca ggc tgg gcc gtg gcc tcc ccc tgt gcc				746
Pro Gln Gly Asn Ser Ser Ala Gly Trp Ala Val Ala Ser Pro Cys Ala				
188	193	198	203	
atc gcc aac atg gac ttt gtc atg gca ctc atc tac gtc atg ctg ctg				794
Ile Ala Asn Met Asp Phe Val Met Ala Leu Ile Tyr Val Met Leu Leu				
204	209	214	219	
ctg ctg ggt gcc ttc ctg ggg gcc tgg ccc gcc ctg tgt ggc cgc tac				842
Leu Leu Gly Ala Phe Leu Gly Ala Trp Pro Ala Leu Cys Gly Arg Tyr				
220	225	230	235	
aag cgc tgg cgt aag cat ggg gtc ttt gtg ctc ctc acc aca gcc acc				890
Lys Arg Trp Arg Lys His Gly Val Phe Val Leu Leu Thr Thr Ala Thr				
236	241	246	251	
tcc gtt gcc ata tgg gtg gtg tgg atc gtc atg tat act tac ggc aac				938
Ser Val Ala Ile Trp Val Val Trp Ile Val Met Tyr Thr Tyr Gly Asn				
252	257	262	267	
aag cag cac aac agt ccc acc tgg gat gac ccc acg ctg gcc atc gcc				986
Lys Gln His Asn Ser Pro Thr Trp Asp Asp Pro Thr Leu Ala Ile Ala				
268	273	278	283	
ctc gcc gcc aat gcc tgg gcc ttc gtc ctc ttc tac gtc atc ccc gag				1034
Leu Ala Ala Asn Ala Trp Ala Phe Val Leu Phe Tyr Val Ile Pro Glu				
284	289	294	299	
gtc tcc cag gtg acc aag tcc agc cca gag caa agc tac cag ggg gac				1082
Val Ser Gln Val Thr Lys Ser Ser Pro Glu Gln Ser Tyr Gln Gly Asp				
300	305	310	315	
atg tac ccc acc cgg ggc gtg ggc tat gag acc atc ctg aaa gag cag				1130
Met Tyr Pro Thr Arg Gly Val Gly Tyr Glu Thr Ile Leu Lys Glu Gln				
316	321	326	331	
aag ggt cag agc atg ttc gtg gag aac aag gcc ttt tcc atg gat gag				1178
Lys Gly Gln Ser Met Phe Val Glu Asn Lys Ala Phe Ser Met Asp Glu				
332	337	342	347	

ccg gtt gca gct aag agg ccg gtg tca cca tac agc ggg tac aat ggg 1226
Pro Val Ala Ala Lys Arg Pro Val Ser Pro Tyr Ser Gly Tyr Asn Gly
348 353 358 363

cag ctg ctg acc agt gtg tac cag ccc act gag atg gcc ctg atg cac 1274
Gln Leu Leu Thr Ser Val Tyr Gln Pro Thr Glu Met Ala Leu Met His
364 369 374 379

aaa gtt ccg tcc gaa gga gct tac gac atc atc ctc cca cgg gcc acc 1322
Lys Val Pro Ser Glu Gly Ala Tyr Asp Ile Ile Leu Pro Arg Ala Thr
380 385 390 395

gcc aac agc cag gtg atg ggc agt gcc aac tcg acc ctg cgg gct gaa 1370
Ala Asn Ser Gln Val Met Gly Ser Ala Asn Ser Thr Leu Arg Ala Glu
396 401 406 411

gac atg tac tcg gcc cag agc cac cag gcg gcc aca ccg ccg aaa gac 1418
Asp Met Tyr Ser Ala Gln Ser His Gln Ala Ala Thr Pro Pro Lys Asp
412 417 422 427

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Gly Lys Asn Ser Gln Val Phe Arg Asn Pro Tyr Val Trp Asp *
428 433 438

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agtgtttgtg gagtcgagga gccaacccca gcctcctgcc aggatcacct cggcgggtcac 1706

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ttcctgcaac ctcaagagac ttcccaggcg ctccaggcctg gatcttgctc ctctgtgagg 1826

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tgagaattca gagaaactgc tgagtgacca ctgaacgaaa agatctaatac ttaaggctta 180

cgcggtgttcc atccaccaca tcagaaca	atg tcg tat gtt ttt gta aat gat	232
	Met Ser Tyr Val Phe Val Asn Asp	
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Ser Ser Gln Thr Asn Val Pro Leu Leu Gln Ala Cys Ile Asp Gly Asp		
9 14 19 24		
ttt aat tat tcc aag cgg ctt ttg gaa agt ggc ttt gac cca aat att	328	
Phe Asn Tyr Ser Lys Arg Leu Leu Glu Ser Gly Phe Asp Pro Asn Ile		
25 30 35 40		
cgt gac agc agg ggc aga aca ggc ctt cac ctt gca gca gct cga ggg	376	
Arg Asp Ser Arg Gly Arg Thr Gly Leu His Leu Ala Ala Ala Arg Gly		
41 46 51 56		
aat gta gac atc tgc cag tta ctg cat aaa ttc ggt gcc gat ctt ctg	424	
Asn Val Asp Ile Cys Gln Leu Leu His Lys Phe Gly Ala Asp Leu Leu		
57 62 67 72		
gcc aca gat tat caa gga aac aca gct ctt cac ctc tgt ggc cat gtg	472	
Ala Thr Asp Tyr Gln Gly Asn Thr Ala Leu His Leu Cys Gly His Val		
73 78 83 88		
gat act atc caa ttt ttg gtt tcc aat gga ctc aaa att gat att tgc	520	
Asp Thr Ile Gln Phe Leu Val Ser Asn Gly Leu Lys Ile Asp Ile Cys		
89 94 99 104		
aat cat caa ggt gct acc cct tta gtt ctg gca aag cgc aga gga gta	568	
Asn His Gln Gly Ala Thr Pro Leu Val Leu Ala Lys Arg Arg Gly Val		
105 110 115 120		
aat aaa gat gtc atc cga ttg ctg gaa tct ttg gaa gaa cag gag gtg	616	
Asn Lys Asp Val Ile Arg Leu Leu Glu Ser Leu Glu Glu Gln Glu Val		
121 126 131 136		
aaa gga ttt aac aga gga acc cac tcg aaa ctg gag acc atg caa aca	664	
Lys Gly Phe Asn Arg Gly Thr His Ser Lys Leu Glu Thr Met Gln Thr		
137 142 147 152		
gct gag agt gaa agt gcc atg gaa agc cat tca ctc ctc aat ccc aac	712	
Ala Glu Ser Glu Ser Ala Met Glu Ser His Ser Leu Leu Asn Pro Asn		
153 158 163 168		
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Leu Gln Gln Gly Glu Gly Val Leu Ser Ser Phe Arg Thr Thr Trp Gln		
169 174 179 184		
gag ttt gtg gag gat ctg ggc ttc tgg aga gta ttg ctg ttg atc ttc	808	
Glu Phe Val Glu Asp Leu Gly Phe Trp Arg Val Leu Leu Leu Ile Phe		
185 190 195 200		
gtc att gct ttg ctg tct ctt ggc att gct tat tat gtg agt ggg gtg	856	
Val Ile Ala Leu Leu Ser Leu Gly Ile Ala Tyr Tyr Val Ser Gly Val		
201 206 211 216		

aaatctaaac aaatatgcaa aattgggtcaa aatgtaagta tatagcattt ttaaagatta 2585
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cttcagggggc cgtccaggac tacagagctg tttcacccta ccttggcttc aatctcttcc 180
ccc atg ctc gaa ggt gcg gag ctg tac ttc aac gtg gac cat ggc tac 228
Met Leu Glu Gly Ala Glu Leu Tyr Phe Asn Val Asp His Gly Tyr
1 5 10
ctg gag ggc ctg gtt cga gga tgc aag gcc agc ctc ctg acc cag caa 276
Leu Glu Gly Leu Val Arg Gly Cys Lys Ala Ser Leu Leu Thr Gln Gln
16 21 26 31
gac tat atc aac ctg gtc cag tgt gag acc cta gaa gac ctg aaa att 324
Asp Tyr Ile Asn Leu Val Gln Cys Glu Thr Leu Glu Asp Leu Lys Ile
32 37 42 47
cat ctc cag act act gat tat ggt aac ttt ttg gct aat cac aca aat 372
His Leu Gln Thr Thr Asp Tyr Gly Asn Phe Leu Ala Asn His Thr Asn
48 53 58 63
cct ctt act gtt tcc aaa att gac act gag atg agg aaa aga cta tgt 420
Pro Leu Thr Val Ser Lys Ile Asp Thr Glu Met Arg Lys Arg Leu Cys
64 69 74 79
gga gaa ttt gag tat ttc cgg aat cat tcc ctg gag ccc ctc agc aca 468
Gly Glu Phe Glu Tyr Phe Arg Asn His Ser Leu Glu Pro Leu Ser Thr
80 85 90 95
ttt ctc acc tat atg acg tgc agt tat atg ata gac aat gtg att ctg 516
Phe Leu Thr Tyr Met Thr Cys Ser Tyr Met Ile Asp Asn Val Ile Leu
96 101 106 111
ctg atg aat ggt gca ttg cag aaa aaa tct gtg aaa gaa att ctg ggg 564
Leu Met Asn Gly Ala Leu Gln Lys Lys Ser Val Lys Glu Ile Leu Gly
112 117 122 127

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gca gag aca cct tca gat ctc ttt aat gcc att ctg atc gaa acg cca Ala Glu Thr Pro Ser Asp Leu Phe Asn Ala Ile Leu Ile Glu Thr Pro 144 149 154 159	660
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tca cag agg cat cga act aaa atc aac agt tac att cca att tta taa Ser Gln Arg His Arg Thr Lys Ile Asn Ser Tyr Ile Pro Ile Leu * 336 341 346 351	1236

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gaatttagta gtagtagggg	ccgctctaga ggatccaagc	ttacgtacgc gtgcatgcga	2136
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Pro Leu Thr Lys Ser Ala Ser Ser Ser Ala Ala Gly Ser Pro Gly Gly	
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ctc acc agc ctc cag cag cag aag cag cgc ctg atc gag tcc ctc cgg	449
Leu Thr Ser Leu Gln Gln Gln Lys Gln Arg Leu Ile Glu Ser Leu Arg	
22 27 32 37	
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Asn Ser His Ser Ser Ile Ala Glu Ile Gln Lys Asp Val Glu Tyr Arg	
38 43 48 53	
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Leu Pro Phe Thr Ile Asn Asn Leu Thr Ile Asn Ile Asn Ile Leu Leu	
54 59 64 69	
cct cca cag ttt cct cag gaa aaa cca gtg atc agt gtt tat cca cca	593
Pro Pro Gln Phe Pro Gln Glu Lys Pro Val Ile Ser Val Tyr Pro Pro	
70 75 80 85	
ata cga cat cac tta atg gat aaa caa gga gtg tat gtt acc tct cca	641
Ile Arg His His Leu Met Asp Lys Gln Gly Val Tyr Val Thr Ser Pro	
86 91 96 101	
tta gta aac aat ttt aca atg cac tca gat ctt gga aaa att att cag	689
Leu Val Asn Asn Phe Thr Met His Ser Asp Leu Gly Lys Ile Ile Gln	
102 107 112 117	
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Ser Leu Leu Asp Glu Phe Trp Lys Asn Pro Pro Val Leu Ala Pro Thr	
118 123 128 133	
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Ser Thr Ala Phe Pro Tyr Leu Tyr Ser Asn Pro Ser Gly Met Ser Pro	
134 139 144 149	
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Tyr Ala Ser Gln Gly Phe Pro Phe Leu Pro Pro Tyr Pro Pro Gln Glu	
150 155 160 165	
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Ala Asn Arg Ser Ile Thr Ser Leu Ser Val Ala Asp Thr Val Ser Ser	
166 171 176 181	
tca aca aca agt cat acc aca gcc aag cct gcc gct cct tca ttt ggt	929
Ser Thr Thr Ser His Thr Thr Ala Lys Pro Ala Ala Pro Ser Phe Gly	
182 187 192 197	
gtc ctt tca aat ctg cca tta ccc att ccc aca gtg gat gct tca ata	977
Val Leu Ser Asn Leu Pro Leu Pro Ile Pro Thr Val Asp Ala Ser Ile	
198 203 208 213	
ccg aca agc caa aat ggt ttt ggg tac aag atg cca gat gtc cct gat	1025
Pro Thr Ser Gln Asn Gly Phe Gly Tyr Lys Met Pro Asp Val Pro Asp	
214 219 224 229	

gca ttt cca gaa ctc tca gaa cta agt gtg tca caa ctc aca gat atg	1073
Ala Phe Pro Glu Leu Ser Glu Leu Ser Val Ser Gln Leu Thr Asp Met	
230 235 240 245	
aat gaa caa gag gag gta tta cta gaa cag ttt ctg act ttg cct caa	1121
Asn Glu Gln Glu Glu Val Leu Leu Glu Gln Phe Leu Thr Leu Pro Gln	
246 251 256 261	
cta aaa caa att att acc gac aaa gat gac tta gta aaa agt att gag	1169
Leu Lys Gln Ile Ile Thr Asp Lys Asp Asp Leu Val Lys Ser Ile Glu	
262 267 272 277	
gaa cta gca aga aaa aat ctc ctt ttg gag ccc agc ttg gaa gcc aaa	1217
Glu Leu Ala Arg Lys Asn Leu Leu Leu Glu Pro Ser Leu Glu Ala Lys	
278 283 288 293	
aga caa act gtt tta gat aag tat gaa tta ctt aca cag atg aag tcc	1265
Arg Gln Thr Val Leu Asp Lys Tyr Glu Leu Leu Thr Gln Met Lys Ser	
294 299 304 309	
act ttc gaa aag aag atg caa agg cag cat gaa ctt agt gag agc tgt	1313
Thr Phe Glu Lys Lys Met Gln Arg Gln His Glu Leu Ser Glu Ser Cys	
310 315 320 325	
agt gca agt gcc ctt cag gca aga ttg aaa gta gct gca cat gaa gct	1361
Ser Ala Ser Ala Leu Gln Ala Arg Leu Lys Val Ala Ala His Glu Ala	
326 331 336 341	
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342 347 352 357	
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Glu Ile Asp Asp Phe Leu Ser Ser Phe Met Glu Lys Arg Thr Ile Cys	
358 363 368 373	
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His Cys Arg Arg Ala Lys Glu Glu Lys Leu Gln Gln Ala Ile Ala Met	
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His Ser Gln Phe His Ala Pro Leu *	
390 395	
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Met Gly Ser Lys Ala Leu Pro Ala Pro Ile Pro Leu His Pro Ser Leu	
1 5 10 15	
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Gln Leu Thr Asn Tyr Ser Phe Leu Gln Ala Val Asn Thr Phe Pro Ala	
17 22 27 32	
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33 38 43 48	
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Met His Met Asn His Trp Thr Leu Gly Tyr Pro Asn Val His Glu Ile	
49 54 59 64	
acc cgc tcc acc atc acg gag atg gcg gcg gcg cag ggc ctc gtg gac	716
Thr Arg Ser Thr Ile Thr Glu Met Ala Ala Gln Gly Leu Val Asp	
65 70 75 80	
gcg cgc ttc ccc ttc ccg gcc ctg cct ttt acc acc cac cta ttc cac	764
Ala Arg Phe Pro Phe Pro Ala Leu Pro Phe Thr Thr His Leu Phe His	
81 86 91 96	
ccc aag cag ggg gcc att gcc cac gtc ctc cca gcc ctg cac aag gac	812
Pro Lys Gln Gly Ala Ile Ala His Val Leu Pro Ala Leu His Lys Asp	
97 102 107 112	
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Arg Pro Arg Phe Asp Phe Ala Asn Leu Ala Val Ala Ala Thr Gln Glu	
113 118 123 128	
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Asp Pro Pro Lys Met Gly Asp Leu Ser Lys Leu Ser Pro Gly Leu Gly	
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Ser Pro Ile Ser Gly Leu Ser Lys Leu Thr Pro Asp Arg Lys Pro Ser	
145 150 155 160	
cga gga agg ttg ccc tcc aaa acg aaa aaa gag ttt atc tgc aag ttt	1004
Arg Gly Arg Leu Pro Ser Lys Thr Lys Lys Glu Phe Ile Cys Lys Phe	
161 166 171 176	
tgc ggc aga cac ttt acc aaa tcc tac aat ttg ctc atc cat gag agg	1052
Cys Gly Arg His Phe Thr Lys Ser Tyr Asn Leu Leu Ile His Glu Arg	
177 182 187 192	
acc cac acg gac gag agg ccg tac acg tgt gac atc tgc cac aag gcc	1100
Thr His Thr Asp Glu Arg Pro Tyr Thr Cys Asp Ile Cys His Lys Ala	
193 198 203 208	

ttc cgg agg caa gat cac ctg cgg gat cac aga tac atc cat tcc aaa	1148
Phe Arg Arg Gln Asp His Leu Arg Asp His Arg Tyr Ile His Ser Lys	
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Glu Lys Pro Phe Lys Cys Gln Glu Cys Gly Lys Gly Phe Cys Gln Ser	
225 230 235 240	
aga act cta gca gtt cac aaa act tta cac atg cag aca tca agc cct	1244
Arg Thr Leu Ala Val His Lys Thr Leu His Met Gln Thr Ser Ser Pro	
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ctcggtagcc gcgcgcccag agacccccgc cgcgggccga ttctctgagc gccagac	177
atg aac cgc aag aaa ctg cag aag ctg acg gac acc tta acc aaa aat	225
Met Asn Arg Lys Lys Leu Gln Lys Leu Thr Asp Thr Leu Thr Lys Asn	
1 5 10 15	
tgc aag cat tta ttc cga ggt ttt gat aaa gat aat gat ggc tgt gta	273

Cys	Lys	His	Leu	Phe	Arg	Gly	Phe	Asp	Lys	Asp	Asn	Asp	Gly	Cys	Val		
17					22					27					32		
aat gta ttg gag tgg att cat gga tta tca ctg ttt ctt cga gga tct																	321
Asn	Val	Leu	Glu	Trp	Ile	His	Gly	Leu	Ser	Leu	Phe	Leu	Arg	Gly	Ser		
33					38					43					48		
ttg gaa gaa aaa atg aaa tat tgc ttt gaa gtg ttt gat ttg aat ggt																	369
Leu	Glu	Glu	Lys	Met	Lys	Tyr	Cys	Phe	Glu	Val	Phe	Asp	Leu	Asn	Gly		
49					54					59					64		
gac gga ttc att tca aag gag gaa atg ttt cac atg ttg aag aac agc																	417
Asp	Gly	Phe	Ile	Ser	Lys	Glu	Glu	Met	Phe	His	Met	Leu	Lys	Asn	Ser		
65					70					75					80		
ctt ctc aaa cag cca tct gag gaa gac cct gat gaa gga att aaa gat																	465
Leu	Leu	Lys	Gln	Pro	Ser	Glu	Glu	Asp	Pro	Asp	Glu	Gly	Ile	Lys	Asp		
81					86					91					96		
ttg gtt gaa ata aca ctg aag aaa atg gat cat gac cat gat ggg aag																	513
Leu	Val	Glu	Ile	Thr	Leu	Lys	Lys	Met	Asp	His	Asp	His	Asp	Gly	Lys		
97					102					107					112		
ctg tct ttt gca gac tat gaa ctg gct gtg aga gaa gag act ctt cta																	561
Leu	Ser	Phe	Ala	Asp	Tyr	Glu	Leu	Ala	Val	Arg	Glu	Glu	Thr	Leu	Leu		
113					118					123					128		
ctg gag gcc ttt ggg cca tgt ctt cct gat cca aag agc cag atg gaa																	609
Leu	Glu	Ala	Phe	Gly	Pro	Cys	Leu	Pro	Asp	Pro	Lys	Ser	Gln	Met	Glu		
129					134					139					144		
ttt gaa gct caa gta ttc aaa gat cca aat gaa ttc aat gat atg tga																	657
Phe	Glu	Ala	Gln	Val	Phe	Lys	Asp	Pro	Asn	Glu	Phe	Asn	Asp	Met	*		
145					150					155					160		
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ttttttctac ttagttcaga aaaatgatgt tgaattgtgt gtttcagggt gaagatgagg																	777
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ga																	839

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<222> (160)..(1647)

<220>
<221> misc_feature

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Met Gly Ser Lys Arg
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tac	tgc	aaa	aaa	tta	cat	gtc	caa	gct	cta	aaa	aac	gtc	aac	agt	caa	270
Tyr	Cys	Lys	Lys	Leu	His	Val	Gln	Ala	Leu	Lys	Asn	Val	Asn	Ser	Gln	
22					27					32					37	

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Lys Gln Phe Leu Arg Leu Leu Gln Asn Glu Gln Phe Glu Leu Asp Met
54 59 64 69

gaa gag gcc att caa aag gca gaa gaa aac aag aga ttg aaa gaa ctc 414
Glu Glu Ala Ile Gln Lys Ala Glu Glu Asn Lys Arg Leu Lys Glu Leu
70 75 80 85

cag ctc aaa caa gaa gaa aaa ctg gct atg gaa ttg gca aaa ctg aaa 462
Gln Leu Lys Gln Glu Glu Lys Leu Ala Met Glu Leu Ala Lys Leu Lys
86 91 96 101

cat gaa agt cta aag gac gaa aag atg agg caa caa gta aga gaa aac 510
His Glu Ser Leu Lys Asp Glu Lys Met Arg Gln Gln Val Arg Glu Asn
102 107 112 117

agc att gag ctt aga gaa ttg gag aag aaa tta aaa gca gct tac atg 558
 Ser Ile Glu Leu Arg Glu Leu Glu Lys Lys Leu Lys Ala Ala Tyr Met
 118 123 128 133

aat aaa gaa agg gca gct cag att gct gaa aag gat gcc att aaa tat 606
Asn Lys Glu Arg Ala Ala Gln Ile Ala Glu Lys Asp Ala Ile Lys Tyr
134 139 144 149

gaa caa atg aaa cgt gat gct gaa ata gcc aaa acc atg atg gaa gaa 654
Glu Gln Met Lys Arg Asp Ala Glu Ile Ala Lys Thr Met Met Glu Glu
150 155 160 165

cac aag aga ata ata aag gaa gag aat gct gca gaa gac aaa cga aac 702
 His Lys Arg Ile Ile Lys Glu Glu Asn Ala Ala Glu Asp Lys Arg Asn
 166 171 176 181

aaa gcg aaa gca cag tac tat ctt gac tta gag aaa caa ctt gaa gaa 750

Lys Ala Lys Ala Gln Tyr Tyr Leu Asp Leu Glu Lys Gln Leu Glu Glu	
182 187 192 197	
caa gaa aaa aaa aag cag gaa gct tat gag cag ctg cta aaa gag aaa	798
Gln Glu Lys Lys Lys Gln Glu Ala Tyr Glu Gln Leu Leu Lys Glu Lys	
198 203 208 213	
ctc atg att gat gaa att gtt agg aag atc tat gaa gaa gat cag ttg	846
Leu Met Ile Asp Glu Ile Val Arg Lys Ile Tyr Glu Glu Asp Gln Leu	
214 219 224 229	
gaa aaa caa caa aag tta gaa aaa atg aat gca atg cga agg tat ata	894
Glu Lys Gln Gln Lys Leu Glu Lys Met Asn Ala Met Arg Arg Tyr Ile	
230 235 240 245	
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Glu Glu Phe Gln Lys Glu Gln Ala Leu Trp Arg Lys Lys Lys Arg Glu	
246 251 256 261	
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Glu Met Glu Glu Glu Asn Arg Lys Ile Ile Glu Phe Ala Asn Met Gln	
262 267 272 277	
cag caa aga gaa gaa gat cgg atg gca aaa gtt caa gaa aat gag gag	1038
Gln Gln Arg Glu Glu Asp Arg Met Ala Lys Val Gln Glu Asn Glu Glu	
278 283 288 293	
aaa agg cta cag ctt cag aat gcg ttg aca cag aaa tta gaa gaa atg	1086
Lys Arg Leu Gln Leu Gln Asn Ala Leu Thr Gln Lys Leu Glu Glu Met	
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Leu Arg Gln Arg Glu Asp Leu Glu Gln Val Arg Gln Glu Leu Tyr Gln	
310 315 320 325	
gaa gaa caa gct gaa ata tat aag agc aag cta aaa gaa gaa gca gaa	1182
Glu Glu Gln Ala Glu Ile Tyr Lys Ser Lys Leu Lys Glu Glu Ala Glu	
326 331 336 341	
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Lys Lys Leu Arg Lys Gln Lys Glu Met Lys Gln Asp Phe Glu Glu Gln	
342 347 352 357	
atg gcc ttg aag gaa tta gtg cta cag gct gca aaa gag gaa gag gag	1278
Met Ala Leu Lys Glu Leu Val Leu Gln Ala Ala Lys Glu Glu Glu Glu	
358 363 368 373	
aac ttt aga aaa act atg cta gct aaa ttt gct gag gat gat cga ata	1326
Asn Phe Arg Lys Thr Met Leu Ala Lys Phe Ala Glu Asp Asp Arg Ile	
374 379 384 389	
gaa tta atg aat gct cag aaa caa aga atg aag cag ctg gaa cac agg	1374
Glu Leu Met Asn Ala Gln Lys Gln Arg Met Lys Gln Leu Glu His Arg	
390 395 400 405	
agg gct gtg gaa aaa ctt att gaa gag cgt cgc caa caa ttc ctt gca	1422
Arg Ala Val Glu Lys Leu Ile Glu Glu Arg Arg Gln Gln Phe Leu Ala	

406	411	416	421	
gac aaa caa cgt. gaa cta gaa gag tgg cag ttg cag caa agg cgg caa				1470
Asp Lys Gln Arg Glu Leu Glu Glu Trp Gln Leu Gln Gln Arg Arg Gln				
422	427	432	437	
gga ttt att aat gca att att gaa gaa gaa agg cta aaa ctt ctt aaa				1518
Gly Phe Ile Asn Ala Ile Ile Glu Glu Glu Arg Leu Lys Leu Leu Lys				
438	443	448	453	
gag cat gct aca aac tta cta ggc tat ctc cct aaa gga gta ttt aaa				1566
Glu His Ala Thr Asn Leu Leu Gly Tyr Leu Pro Lys Gly Val Phe Lys				
454	459	464	469	
aaa gag gat gat att gat ctg ctt ggt gaa gag ttc agg aaa gta tat				1614
Lys Glu Asp Asp Ile Asp Leu Leu Gly Glu Glu Phe Arg Lys Val Tyr				
470	475	480	485	
caa caa agg agt gaa att tgt gaa gag aaa tga tatcatca aaattgggta				1665
Gln Gln Arg Ser Glu Ile Cys Glu Glu Lys *				
486	491	496		
aagcatagat tttttgtatg ttaccactag atgtcagcat aacttttgtt ttacagttca				1725
gtggcattag gtatccattg tctgttttga ttttgtaaatt catcactgaa tttcataact				1785
tgtaaacaat tatcagatac aaattaattt taatcaagct gttatttttg tactgataat				1845
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tacgaacttt acttacttga tttagccagg gaaataaata tttggaattt tcttttaaag				2025
catctttttt ggtctactgt aaggaggag aattataaat gaaaagagtc aagaatttta				2085
ttatctgatg tgcttaattg tcatgctaag aacttaaaaa acaactcaaa aagagctaatt				2145
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atcacatact gtcatagaga ctaactgaag tagatcactt atgaatttcc ccattcaagt				2325
gctttcataa attcctcctc agtgaaagat agcatcttgg cagcttcaat atgcatcttt				2385
tgctttttta aaacatcaat taattttaac tgtttcttga accctatcat taattctcct				2445
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ccacagacct ctttatgttc taactgggtc tgcacagaag aggcaggaga caggctttag      180
cctcaaggga gggagagaga ggcaagaggc cacagtcccc aagttaggag gccacaagga      240
aagaaaagga cttctgtgaa gaaaagagtc ccgtctgagt tgcagtccac ttgcctgggg      300
ccactggagg agatggggct ggggaggggc cgctgcaggg aggagggcgg gggtcagcgg      360
ctgtgacatg acgcacgtgc ctctcctggg cttgaaattg aagaactgag gaggcggtag      420
tggcgagagt cagtctttca gagcacagga tggaacaaga actccagcca ctgactgtct      480
c   atg tat ctg caa ggg ccg agg aaa tta atg acc caa gga ggc tat      526
    Met Tyr Leu Gln Gly Pro Arg Lys Leu Met Thr Gln Gly Gly Tyr
      1             5             10

gat atg gtc caa aaa ctt ttc ctg gat ttt ttc cgt agg cgg ctg agc      574
Asp Met Val Gln Lys Leu Phe Leu Asp Phe Phe Arg Arg Arg Leu Ser
  16             21             26             31

cag agg cca act gca gag gaa ctg gaa cag agg aac att ttg aaa cct      622
Gln Arg Pro Thr Ala Glu Leu Glu Gln Arg Asn Ile Leu Lys Pro
  32             37             42             47

cgg aat gaa caa gag gaa cag gag gag aag aga gag atc aag agg agg      670
Arg Asn Glu Gln Glu Glu Gln Glu Glu Lys Arg Glu Ile Lys Arg Arg
  48             53             58             63

cta acc cga aag ctc agt caa agg ccc acg gtg gaa gag ctt cgg gaa      718
Leu Thr Arg Lys Leu Ser Gln Arg Pro Thr Val Glu Glu Leu Arg Glu
  64             69             74             79

aga aag atc ctc atc cgc ttc agt gac tac gtg gag gtg gct gac gct      766
Arg Lys Ile Leu Ile Arg Phe Ser Asp Tyr Val Glu Val Ala Asp Ala
  80             85             90             95

cag gac tat gac cgc agg gca gat aag ccg tgg acc cgc ctc acc gct      814
Gln Asp Tyr Asp Arg Arg Ala Asp Lys Pro Trp Thr Arg Leu Thr Ala
  96             101            106            111

gca gac aaa gct gcc atc cga aag gag ctc aat gaa ttc aaa agc act      862
Ala Asp Lys Ala Ala Ile Arg Lys Glu Leu Asn Glu Phe Lys Ser Thr
 112             117            122            127

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Met Ala Arg Asn Ala Glu Lys Ala Met Thr Ala Leu Ala Arg
 1 5 10

ttt cgc cag gct cag ctg gaa gag gga aaa gtg aag gaa cga aga ccc Phe Arg Gln Ala Gln Leu Glu Glu Gly Lys Val Lys Glu Arg Arg Pro 15 20 25 30	396
ttt ctg gcc tca gaa tgt act gaa ctg cct aaa gct gag aag tgg aga Phe Leu Ala Ser Glu Cys Thr Glu Leu Pro Lys Ala Glu Lys Trp Arg 31 36 41 46	444
cga cag atc att gga gag atc tct aaa aaa gtg gct cag att cag aat Arg Gln Ile Ile Gly Glu Ile Ser Lys Lys Val Ala Gln Ile Gln Asn 47 52 57 62	492
gct ggt tta ggt gaa ttt cga att cgt gac ctg aat gat gaa att aac Ala Gly Leu Gly Glu Phe Arg Ile Arg Asp Leu Asn Asp Glu Ile Asn 63 68 73 78	540
aag ctg cta agg gag aaa gga cac tgg gag gtc cgg ata aag gag ctg Lys Leu Leu Arg Glu Lys Gly His Trp Glu Val Arg Ile Lys Glu Leu 79 84 89 94	588
gga ggt cct gat tat gga aaa gtt ggc cct aaa atg ctg gat cat gaa Gly Gly Pro Asp Tyr Gly Lys Val Gly Pro Lys Met Leu Asp His Glu 95 100 105 110	636
gga aaa gaa gtc cca gga aac cga ggt tac aag tac ttt gga gca gca Gly Lys Glu Val Pro Gly Asn Arg Gly Tyr Lys Tyr Phe Gly Ala Ala 111 116 121 126	684
aaa gat ttg cct ggt gtt aga gag ctg ttt gaa aaa gaa cct ctt cct Lys Asp Leu Pro Gly Val Arg Glu Leu Phe Glu Lys Glu Pro Leu Pro 127 132 137 142	732
cct ccc aga aag aca cgt gct gag ctc atg aag gca atc gat ttt gag Pro Pro Arg Lys Thr Arg Ala Glu Leu Met Lys Ala Ile Asp Phe Glu 143 148 153 158	780
tac tat ggt tac cta gat gaa gat gat ggt gtt att gtg cct ttg gaa Tyr Tyr Gly Tyr Leu Asp Glu Asp Asp Gly Val Ile Val Pro Leu Glu 159 164 169 174	828
cag gaa tat gaa aag aaa ctc aga gcc gag tta gtg gaa aag tgg aaa Gln Glu Tyr Glu Lys Lys Leu Arg Ala Glu Leu Val Glu Lys Trp Lys 175 180 185 190	876
gca gag aga gag gct cgg ctg gca aga gga gaa aag gaa gag gag gag Ala Glu Arg Glu Ala Arg Leu Ala Arg Gly Glu Lys Glu Glu Glu Glu 191 196 201 206	924
gaa gag gag gaa gag atc aac atc tat gca gtc acc gag gag gag tcg Glu Glu Glu Glu Glu Ile Asn Ile Tyr Ala Val Thr Glu Glu Glu Ser 207 212 217 222	972
gac gag gaa ggc agc cag gag aaa gga ggg gac gac agc cag cag aag Asp Glu Glu Gly Ser Gln Glu Lys Gly Gly Asp Asp Ser Gln Gln Lys	1020

223	228	233	238	
ttc att gct cac gtc	cct gtt ccc tcg	cag caa gag att	gag gag gca	1068
Phe Ile Ala His Val	Pro Val Pro Ser Gln	Gln Glu Ile Glu	Glu Ala	
239	244	249	254	
ctg gtg cga agg aag	aaa atg gaa ctc	ctc cag aag tat	gca agc gag	1116
Leu Val Arg Arg Lys	Lys Met Glu Leu	Leu Gln Lys Tyr	Ala Ser Glu	
255	260	265	270	
acc ctg cag gcc caa	agt gaa gaa gcc	aga agg ctc ctg	ggg tat tag	1164
Thr Leu Gln Ala Gln	Ser Glu Glu Ala	Arg Arg Leu Leu	Gly Tyr *	
271	276	281	286	
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tgtgtcccgt gttttctgcg tgagaggaaa ag atg cta gaa cca cag gag aat				173
		Met Leu Glu Pro Gln Glu Asn		
		1 5		
ggc gtg att gac cta cca gat tat gag cat gta gaa gat gaa act ttt				221
Gly Val Ile Asp Leu	Pro Asp Tyr Glu	His Val Glu Asp	Glu Thr Phe	
8	13	18	23	
cct cct ttc cca cct cca gcc tct cca gag aga caa gat ggt gaa gga				269
Pro Pro Phe Pro Pro	Pro Ala Ser Pro	Glu Arg Gln Asp	Gly Glu Gly	
24	29	34	39	
act gag cct gat gaa gag tca gga aat gga gca cct gtt cct gta cct				317
Thr Glu Pro Asp Glu	Glu Ser Gly Asn	Gly Ala Pro Val	Pro Val Pro	
40	45	50	55	

cca aag aga aca gtt aaa aga aat ata ccc aag ctg gat gct cag aga	365
Pro Lys Arg Thr Val Lys Arg Asn Ile Pro Lys Leu Asp Ala Gln Arg	
56 61 66 71	
tta att tca gag aga gga ctt cca gcc tta agg cat gta ttt gat aag	413
Leu Ile Ser Glu Arg Gly Leu Pro Ala Leu Arg His Val Phe Asp Lys	
72 77 82 87	
gca aaa ttc aaa ggt aaa ggt cat gag gct gaa gac ttg aag atg cta	461
Ala Lys Phe Lys Gly Lys Gly His Glu Ala Glu Asp Leu Lys Met Leu	
88 93 98 103	
atc aga cac atg gag cac tgg gca cat agg cta ttg cct aaa ctg cag	509
Ile Arg His Met Glu His Trp Ala His Arg Leu Phe Pro Lys Leu Gln	
104 109 114 119	
ttt gag gat ttt att gac aga gtt gaa tac ctg gga agt aaa aag gaa	557
Phe Glu Asp Phe Ile Asp Arg Val Glu Tyr Leu Gly Ser Lys Lys Glu	
120 125 130 135	
gtt cag acc tgt tta aaa cga att cga ctt gat ctc cct att tta cat	605
Val Gln Thr Cys Leu Lys Arg Ile Arg Leu Asp Leu Pro Ile Leu His	
136 141 146 151	
gaa gat ttt gtt agc aat aat gat gaa gtt gcg gag aat aat gaa cat	653
Glu Asp Phe Val Ser Asn Asn Asp Glu Val Ala Glu Asn Asn Glu His	
152 157 162 167	
gat gtc act tct act gaa tta gat ccc ttt ctg aca aac tta tct gaa	701
Asp Val Thr Ser Thr Glu Leu Asp Pro Phe Leu Thr Asn Leu Ser Glu	
168 173 178 183	
agt gag atg ttt gct tct gag tta agt aga agc cta aca gaa gag caa	749
Ser Glu Met Phe Ala Ser Glu Leu Ser Arg Ser Leu Thr Glu Glu Gln	
184 189 194 199	
caa caa aga att gag aga aat aaa caa ctg gcc ttg gaa aga agg cag	797
Gln Gln Arg Ile Glu Arg Asn Lys Gln Leu Ala Leu Glu Arg Arg Gln	
200 205 210 215	
gca aag ctg ctg agt aat agt cag acc cta gga aat gat atg tta atg	845
Ala Lys Leu Leu Ser Asn Ser Gln Thr Leu Gly Asn Asp Met Leu Met	
216 221 226 231	
aat aca ccc agg gca cac acg gtt gaa gag gtt aat act gat gag gat	893
Asn Thr Pro Arg Ala His Thr Val Glu Glu Val Asn Thr Asp Glu Asp	
232 237 242 247	
caa aag gag gag tca aat gga tta aac gaa gac att ctg gac aat cca	941
Gln Lys Glu Glu Ser Asn Gly Leu Asn Glu Asp Ile Leu Asp Asn Pro	
248 253 258 263	
tgt aat gat gct att gcc aat act tta aat gaa gag gaa aca ctg ctg	989
Cys Asn Asp Ala Ile Ala Asn Thr Leu Asn Glu Glu Glu Thr Leu Leu	
264 269 274 279	
gac cag tct ttt aaa aat gtg caa cag caa ctt gat gct aca tcc aga	1037

Asp Gln Ser Phe Lys Asn Val Gln Gln Gln Leu Asp Ala Thr Ser Arg
 280 285 290 295
 aat att act gaa gct aga taa gt ttccattaag agaaaatgta tctgttaagt 1090
 Asn Ile Thr Glu Ala Arg *
 296 301
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 Met Arg Ala Gly
 1

ccg gag ccc cag gcg ctg gtg ggg cag aaa cgc ggc gcc ctg cgt ctt 164
 Pro Glu Pro Gln Ala Leu Val Gly Gln Lys Arg Gly Ala Leu Arg Leu
 5 10 15 20

ctg gtt ccg agg ctg gtc ctc acc gtt tcc gct ccg gcg gaa gtg agg 212
 Leu Val Pro Arg Leu Val Leu Thr Val Ser Ala Pro Ala Glu Val Arg
 21 26 31 36

agg agg gtc ctt cga ccc gtg ctg agc tgg atg gac cgc gag acg cgc 260
 Arg Arg Val Leu Arg Pro Val Leu Ser Trp Met Asp Arg Glu Thr Arg
 37 42 47 52

gcc ctc gcc gac agc cac ttc cga ggc ctg ggg gtc gat gtc ccc ggc 308
 Ala Leu Ala Asp Ser His Phe Arg Gly Leu Gly Val Asp Val Pro Gly
 53 58 63 68

gtc ggc cag gct ccg ggc cgg gta gcc ttc gtc tcg gag ccg ggc gcc 356
 Val Gly Gln Ala Pro Gly Arg Val Ala Phe Val Ser Glu Pro Gly Ala
 69 74 79 84

ttc tcc tac gcc gac ttt gtg cgg ggc ttc ttg ctg ccc aac ctg ccc 404
 Phe Ser Tyr Ala Asp Phe Val Arg Gly Phe Leu Leu Pro Asn Leu Pro

85	90	95	100	
tgc gtg ttt tcc agc gcc ttc acg cag ggc tgg ggc agc cgg cgg cgc				452
Cys Val Phe Ser Ser Ala Phe Thr Gln Gly Trp Gly Ser Arg Arg Arg				
101	106	111	116	
tgg gtg acg ccc gcg ggg agg ccc gac ttc gac cac ctg cta cgg acc				500
Trp Val Thr Pro Ala Gly Arg Pro Asp Phe Asp His Leu Leu Arg Thr				
117	122	127	132	
tac gga gac gtg gtt gta cca gtt gca aac tgt ggg gtc cag gaa tac				548
Tyr Gly Asp Val Val Val Pro Val Ala Asn Cys Gly Val Gln Glu Tyr				
133	138	143	148	
aac tcg aac ccc aaa gag cac atg act ctc aga gac tac atc acc tac				596
Asn Ser Asn Pro Lys Glu His Met Thr Leu Arg Asp Tyr Ile Thr Tyr				
149	154	159	164	
tgg aaa gag tac ata cag gcg ggc tac tcc tct ccc agg ggc tgt ctc				644
Trp Lys Glu Tyr Ile Gln Ala Gly Tyr Ser Ser Pro Arg Gly Cys Leu				
165	170	175	180	
tac ctc aaa gac tgg cac ttg tgc agg gac ttt ccg gtg gag gac gtt				692
Tyr Leu Lys Asp Trp His Leu Cys Arg Asp Phe Pro Val Glu Asp Val				
181	186	191	196	
ttc acc ctg cct gtg tac ttc tcg tcc gac tgg ctg aat gag ttc tgg				740
Phe Thr Leu Pro Val Tyr Phe Ser Ser Asp Trp Leu Asn Glu Phe Trp				
197	202	207	212	
gat gca ctg gat gtg gat gac tac cgc ttt gtc tac gcg ggg cct gcg				788
Asp Ala Leu Asp Val Asp Asp Tyr Arg Phe Val Tyr Ala Gly Pro Ala				
213	218	223	228	
ggc agc tgg tcc ccg ttc cat gct gac atc ttc cgc tcc ttc agc tgg				836
Gly Ser Trp Ser Pro Phe His Ala Asp Ile Phe Arg Ser Phe Ser Trp				
229	234	239	244	
tct gtc aat gtc tgt ggg agg aag aag tgg ctc ctc ttc ccc cca ggg				884
Ser Val Asn Val Cys Gly Arg Lys Lys Trp Leu Leu Phe Pro Pro Gly				
245	250	255	260	
cag gaa gag gcc ctg ccg gac cgc cac ggc aac ctg ccc tac gac gtg				932
Gln Glu Glu Ala Leu Arg Asp Arg His Gly Asn Leu Pro Tyr Asp Val				
261	266	271	276	
acc tcc cca gca ctc tgc gac aca cac ctg cac cca ggg aac cag ctt				980
Thr Ser Pro Ala Leu Cys Asp Thr His Leu His Pro Gly Asn Gln Leu				
277	282	287	292	
gct ggc cca ccc ttg gag atc acg cag gaa gcg ggc gag atg gtg ttt				1028
Ala Gly Pro Pro Leu Glu Ile Thr Gln Glu Ala Gly Glu Met Val Phe				
293	298	303	308	
gtg ccc agt ggc tgg cac cac cag gtg cac aac ctg gga tga caccatc				1077
Val Pro Ser Gly Trp His His Gln Val His Asn Leu Gly *				
309	314	319		

tccatcaacc acaactgggt caatggcttc aacctggcca acatgtggcg cttcttgcag	1137
caggagctat gcgccgtgca ggaggaggtc agcgagtgga gggactccat gcccgactgg	1197
caccaccact gccagggtcat catgagggtcc tgctcgggca tcaactttga agagttttac	1257
cacttctca aggtcatcgc tgagaagagg ctcttggtcc tgagggaggc agccgctgag	1317
gacggtgctg gggtggggtt cgaacaggca gcctttgatg ttgggcgcac cacagagggtg	1377
ctggcctcct tgggtgcgca ccccgacttc cagagagtgg acaccagcgc gttctcacca	1437
cagcccaaag agctgctgca gcagctgaga gaggctgttg atgctgctgc ggccccatag	1497
cacctgtcgt gaggatagaa ggacgggtgg aagagaggca gcctcctgct ccggggccct	1557
tccagaaata aagaccgccc tccctgtgac ctggggccca cccctgtcga ggcttgtggc	1617
ctggctgttc atggccactg cctgggtgcc tgttttcagg gtgaaggccc aatggaggtc	1677
agggacccaa gatgggggatg gtggcccttc tgacctgcaa gcagggcctg ctggggnagc	1737
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 <213> Homo sapiens

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atg acc agg tat tgg gag ggc tgg tct caa cac att tca ctc ttc agg	164
Met Thr Arg Tyr Trp Glu Gly Trp Ser Gln His Ile Ser Leu Phe Arg	
1 5 10 15	
gag cca gtt gat aat ctg agt cct gag gag cgt gat gcc cgc aca gtt	212
Glu Pro Val Asp Asn Leu Ser Pro Glu Glu Arg Asp Ala Arg Thr Val	
17 22 27 32	
ttc tgt atg cag tta gct gcc cga att cgg cct cga gat ctg gag gac	260
Phe Cys Met Gln Leu Ala Ala Arg Ile Arg Pro Arg Asp Leu Glu Asp	
33 38 43 48	
ttt ttc tct gct gta ggc aag gtt cgc gat gta cgt atc atc tca gat	308
Phe Phe Ser Ala Val Gly Lys Val Arg Asp Val Arg Ile Ile Ser Asp	

49	54	59	64	
cgg aac tca cgt cgt tct aag ggc att gcc tac gtg gaa ttc tgt gaa				356
Arg Asn Ser Arg Arg Ser Lys Gly Ile Ala Tyr Val Glu Phe Cys Glu				
65	70	75	80	
atc cag tct gtg cca ctg gcc att ggg ctg act ggg cag cgg ttg ctg				404
Ile Gln Ser Val Pro Leu Ala Ile Gly Leu Thr Gly Gln Arg Leu Leu				
81	86	91	96	
gga gtg cct atc att gta cag gct tca cag gca gag aaa aac cga ctg				452
Gly Val Pro Ile Ile Val Gln Ala Ser Gln Ala Glu Lys Asn Arg Leu				
97	102	107	112	
gca gcc atg gcc aac aac ctg caa aag ggc aat ggt gga cca atg cgc				500
Ala Ala Met Ala Asn Asn Leu Gln Lys Gly Asn Gly Gly Pro Met Arg				
113	118	123	128	
ctc tat gtg ggt tcc ctg cac ttc aat atc act gaa gac atg ctc cgg				548
Leu Tyr Val Gly Ser Leu His Phe Asn Ile Thr Glu Asp Met Leu Arg				
129	134	139	144	
ggc atc ttt gag ccc ttt ggt aaa att gat aat att gtc ctg atg aag				596
Gly Ile Phe Glu Pro Phe Gly Lys Ile Asp Asn Ile Val Leu Met Lys				
145	150	155	160	
gac tca gat aca ggc cgc tct aaa ggt tat ggt ttc atc acg ttc tct				644
Asp Ser Asp Thr Gly Arg Ser Lys Gly Tyr Gly Phe Ile Thr Phe Ser				
161	166	171	176	
gat tct gag tgt gcc cgg cgg gcc ctg gaa cag ttg aat ggg ttt gag				692
Asp Ser Glu Cys Ala Arg Arg Ala Leu Glu Gln Leu Asn Gly Phe Glu				
177	182	187	192	
ctt gct ggt cga cct atg agg gtt ggc cat gtg act gag cga ctg gat				740
Leu Ala Gly Arg Pro Met Arg Val Gly His Val Thr Glu Arg Leu Asp				
193	198	203	208	
ggt ggc aca gac atc act ttt cct gat ggg gac cag gag ctg gat ctg				788
Gly Gly Thr Asp Ile Thr Phe Pro Asp Gly Asp Gln Glu Leu Asp Leu				
209	214	219	224	
gga tca gca ggt gga cgt ttt cag ctc atg gca aaa ctg gca gaa ggc				836
Gly Ser Ala Gly Gly Arg Phe Gln Leu Met Ala Lys Leu Ala Glu Gly				
225	230	235	240	
gct gga atc caa ctg cca agc act gct gct gct gct gct gcc gcc gcc				884
Ala Gly Ile Gln Leu Pro Ser Thr Ala Ala Ala Ala Ala Ala Ala				
241	246	251	256	
gcc gcc ccg gct gct gcc ttg caa ctg aat gga gca gtt ccc ttg ggg				932
Ala Ala Pro Ala Ala Ala Leu Gln Leu Asn Gly Ala Val Pro Leu Gly				
257	262	267	272	
gcc ctg aat cca gca gct ctg act gct ctg agt cca gcc ctg aac ctt				980
Ala Leu Asn Pro Ala Ala Leu Thr Ala Leu Ser Pro Ala Leu Asn Leu				
273	278	283	288	

170	175	180	185	
gac cag gag ggg gca	gaa ggc acc ctg tcg	tgg ctg ggc acc gtc ttc		1047
Asp Gln Glu Gly Ala	Glu Gly Thr Leu Ser	Trp Leu Gly Thr Val Phe		
186	191	196	201	
ggc gtg ctg gct agc	ctc tgt gtc tcg ctc	aac gcc atc tac acc acg		1095
Gly Val Leu Ala Ser	Leu Cys Val Ser Leu	Asn Ala Ile Tyr Thr Thr		
202	207	212	217	
aag gtg ctc ccg gcg	gtg gac ggc agc atc	tgg cgc ctg act ttc tac		1143
Lys Val Leu Pro Ala	Val Asp Gly Ser Ile	Trp Arg Leu Thr Phe Tyr		
218	223	228	233	
aac aac gtc aac gcc	tgc atc ctc ttc ctg	ccc ctg ctc ctg ctg ctc		1191
Asn Asn Val Asn Ala	Cys Ile Leu Phe Leu	Pro Leu Leu Leu Leu Leu		
234	239	244	249	
ggg gag ctt cag gcc	ctg cgt gac ttt gcc	cag ctg ggc agt gcc cac		1239
Gly Glu Leu Gln Ala	Leu Arg Asp Phe Ala	Gln Leu Gly Ser Ala His		
250	255	260	265	
ttc tgg ggg atg atg	acg ctg ggc ggc ctg	ttt ggc ttt gcc atc ggc		1287
Phe Trp Gly Met Met	Thr Leu Gly Gly Leu	Phe Gly Phe Ala Ile Gly		
266	271	276	281	
tac gtg aca gga ctg	cag atc aag ttc acc	agt ccg ctg acc cac aat		1335
Tyr Val Thr Gly Leu	Gln Ile Lys Phe Thr	Ser Pro Leu Thr His Asn		
282	287	292	297	
gtg tcg ggc acg gcc	aag gcc tgt gcc cag	aca gtg ctg gcc gtg ctc		1383
Val Ser Gly Thr Ala	Lys Ala Cys Ala Gln	Thr Val Leu Ala Val Leu		
298	303	308	313	
tac tac gag gag acc	aag agc ttc ctc tgg	tgg acg agc aac atg atg		1431
Tyr Tyr Glu Glu Thr	Lys Ser Phe Leu Trp	Trp Thr Ser Asn Met Met		
314	319	324	329	
gtg ctg ggc ggc tcc	tcc gcc tac acc tgg	gtc agg ggc tgg gag atg		1479
Val Leu Gly Gly Ser	Ser Ala Tyr Thr Trp	Val Arg Gly Trp Glu Met		
330	335	340	345	
aag aag act ccg gag	gag ccc agc ccc aaa	gac agc gag aag agc gcc		1527
Lys Lys Thr Pro Glu	Glu Pro Ser Pro Lys	Asp Ser Glu Lys Ser Ala		
346	351	356	361	
atg ggg gtg tga gca	ccacaggcac cctggatggc	ccggccccgg ggcccgtaca		1582
Met Gly Val *				
362				
caggcagggc cagcacagta	gtgaaggcgg tctcctggac	cccagaagcg tgctgtggtg		1642
tggactgggt gctacttata	gacccaatca gaatacgggtg	gttgagaagg aaccagtgtt		1702
tacaagtaat atcagaaagt	tgaaggaacc agtgtttaca	agtaatacca gaaagttgcc		1762
aaacccttct ctatcctctc	gtattttctga gtttttgtcc	ttcccagagg agcacctag		1822

tgagagttga accccttcct tctgcctcca gggcctgtct gcctccacat cactctgagg 1882
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 actcagggga gatggcccta ccacagccac ctggagaggg ttgggaagcc ttccgtctgc 2002
 ggtgggcagg cagcctcacc ctgggcccac agaccggcct tcctttggag gaaagtgtgg 2062
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 ctgggcagtg gcctgggaat ggggtggatt gtgagaaagt gctcaccatc tatacacct 2182
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 gctgctgctc cgcggtggag tcaccgcacc gctcccgga tc atg gtg ttc tac 174
 Met Val Phe Tyr
 1
 ttc acc agc agc agc gtt aat tca tct gcc tac act att tac atg gga 222
 Phe Thr Ser Ser Ser Val Asn Ser Ser Ala Tyr Thr Ile Tyr Met Gly
 5 10 15 20
 aaa gat aaa tat gaa aat gaa gat ctg atc aag cat ggc tgg cct gaa 270
 Lys Asp Lys Tyr Glu Asn Glu Asp Leu Ile Lys His Gly Trp Pro Glu
 21 26 31 36
 gat atc tgg ttt cat gtg gac aaa ctc tct tgg gct cat gta tac ctt 318
 Asp Ile Trp Phe His Val Asp Lys Leu Ser Ser Ala His Val Tyr Leu
 37 42 47 52
 cga tta cat aag gga gag aat ata gaa gac atc cca aag gaa gtg ctg 366
 Arg Leu His Lys Gly Glu Asn Ile Glu Asp Ile Pro Lys Glu Val Leu
 53 58 63 68
 atg gac tgt gcc cac ctt gtg aag gcc aat agc att caa ggc tgc aag 414
 Met Asp Cys Ala His Leu Val Lys Ala Asn Ser Ile Gln Gly Cys Lys
 69 74 79 84

atg aac aac gtt aat gtg gta tat acg ccg tgg tct aac ctg aag aaa	462
Met Asn Asn Val Asn Val Val Tyr Thr Pro Trp Ser Asn Leu Lys Lys	
85 90 95 100	
aca gct gac atg gat gtg ggg cag ata ggc ttt cac agg cag aag gat	510
Thr Ala Asp Met Asp Val Gly Gln Ile Gly Phe His Arg Gln Lys Asp	
101 106 111 116	
gta aaa att gtg aca gtg gag aag aaa gta aat gag atc ctg aac cga	558
Val Lys Ile Val Thr Val Glu Lys Lys Val Asn Glu Ile Leu Asn Arg	
117 122 127 132	
tta gaa aag acc aaa gtc gag cgg ttc tca gac cta gca gca gag aaa	606
Leu Glu Lys Thr Lys Val Glu Arg Phe Ser Asp Leu Ala Ala Glu Lys	
133 138 143 148	
gaa tgc aga gat cgt gaa gag agg aat gag aaa aaa gcc caa att cag	654
Glu Cys Arg Asp Arg Glu Glu Arg Asn Glu Lys Lys Ala Gln Ile Gln	
149 154 159 164	
gaa atg aaa aag aga gaa aaa gaa gaa atg aag aag aag agg gaa atg	702
Glu Met Lys Lys Arg Glu Lys Glu Glu Met Lys Lys Lys Arg Glu Met	
165 170 175 180	
gat gaa ctt agg agc tat tca tca cta atg aaa gtt gaa aat atg tct	750
Asp Glu Leu Arg Ser Tyr Ser Ser Leu Met Lys Val Glu Asn Met Ser	
181 186 191 196	
tca aat cag gat ggc aat gat tca gat gaa ttc atg taa aaggagaaaa	799
Ser Asn Gln Asp Gly Asn Asp Ser Asp Glu Phe Met *	
197 202 207	
ggagaaaagg acctttgaaa gatgtgaatg tagagacaat tgcagacctt ttggtttcat	859
ctgtgttctg aaatataaaa tacaaccaa attctacctt catcctaccc agaaattatt	919
gattttcaag ttttaaaaaa attgtacctt ttttgctgac agaaaaggat cagatatgta	979
taaaatagtt gaacttgaca gcatataact taaagtgaaa atgtttttgc cagaacatgt	1039
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ctctgaaaaa aaaaaaa	1116

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<221> CDS
<222> (186)..(1607)

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ccaaaggaac gaatattcct gccccacaga gtcccgctctt tggtgaggct gtttctggag 180

tttac atg atg acc aag gta cta ggc atg gcc cca gtt ctg ggc cct 227
Met Met Thr Lys Val Leu Gly Met Ala Pro Val Leu Gly Pro
1 5 10

agg cct cca cag gag caa gtg ggg cct ctg atg gta aaa gtc gag gag 275
Arg Pro Pro Gln Glu Gln Val Gly Pro Leu Met Val Lys Val Glu Glu
15 20 25 30

aaa gaa gag aaa ggc aag tac ctt cct agc ctg gag atg ttc cgc cag 323
Lys Glu Glu Lys Gly Lys Tyr Leu Pro Ser Leu Glu Met Phe Arg Gln
31 36 41 46

cgc ttc agg cag ttt ggg tac cat gat acc cct gga ccc cga gag gcc 371
Arg Phe Arg Gln Phe Gly Tyr His Asp Thr Pro Gly Pro Arg Glu Ala
47 52 57 62

ctg agc caa ctc cgg gtg ctc tgc tgt gag tgg ctg agg ccc gag atc 419
Leu Ser Gln Leu Arg Val Leu Cys Cys Glu Trp Leu Arg Pro Glu Ile
63 68 73 78

cac acc aag gag cag atc ctg gag cta ctg gtg ctg gag cag ttc ctg 467
His Thr Lys Glu Gln Ile Leu Glu Leu Leu Val Leu Glu Gln Phe Leu
79 84 89 94

acc atc ctg ccc cag gag ctc cag gcc tgg gtg cag gag cat tgc ccg 515
Thr Ile Leu Pro Gln Glu Leu Gln Ala Trp Val Gln Glu His Cys Pro
95 100 105 110

gag agc gct gaa gag gct gtc act ctc ctc gaa gat ctg gag cgg gaa 563
Glu Ser Ala Glu Glu Ala Val Thr Leu Leu Glu Asp Leu Glu Arg Glu
111 116 121 126

ctg gat gag cca gga cac cag gtc tca act cct cca aac gaa cag aaa 611
Leu Asp Glu Pro Gly His Gln Val Ser Thr Pro Pro Asn Glu Gln Lys
127 132 137 142

ccg gtg tgg gag aag ata tcc tcc tca gga act gca aag gaa tcc ccg 659
Pro Val Trp Glu Lys Ile Ser Ser Ser Gly Thr Ala Lys Glu Ser Pro
143 148 153 158

agc agc atg cag cca cag ccc ttg gag acc agt cac aaa tac gag tct 707
Ser Ser Met Gln Pro Gln Pro Leu Glu Thr Ser His Lys Tyr Glu Ser
159 164 169 174

tgg ggg ccc ctg tac atc caa gag tct ggt gag gag cag gag ttc gct 755
Trp Gly Pro Leu Tyr Ile Gln Glu Ser Gly Glu Glu Gln Glu Phe Ala
175 180 185 190

caa gat cca aga aag gtc cga gat tgc aga ttg agt acc cag cac gag 803
Gln Asp Pro Arg Lys Val Arg Asp Cys Arg Leu Ser Thr Gln His Glu

191	196	201	206	
gaa tca gca gat gag	cag aaa ggt tct	gaa gca gag ggg ctc	aaa ggg	851
Glu Ser Ala Asp Glu	Gln Lys Gly Ser	Glu Ala Glu Gly	Leu Lys Gly	
207	212	217	222	
gat ata att tct gtg	att atc gcc aat	aaa cct gag gcc	agc tta gag	899
Asp Ile Ile Ser Val	Ile Ile Ala Asn	Lys Pro Glu Ala	Ser Leu Glu	
223	228	233	238	
agg cag tgc gta aac	ctt gaa aat gaa	aaa gga aca aaa	ccc cct ctt	947
Arg Gln Cys Val Asn	Leu Glu Asn Glu	Lys Gly Thr Lys	Pro Pro Leu	
239	244	249	254	
caa gag gca ggc tcc	aag aaa ggt aga	gaa tca gtt cct	act aaa cct	995
Gln Glu Ala Gly Ser	Lys Lys Gly Arg	Glu Ser Val Pro	Thr Lys Pro	
255	260	265	270	
acc cca gga gag aga	cgt tat ata tgt	gct gaa tgt ggc	aaa gcc ttt	1043
Thr Pro Gly Glu Arg	Arg Tyr Ile Cys	Ala Glu Cys Gly	Lys Ala Phe	
271	276	281	286	
agt aat agc tca aat	ctc acc aaa cac	agg aga aca cac	act ggg gag	1091
Ser Asn Ser Ser Asn	Leu Thr Lys His	Arg Arg Thr His	Thr Gly Glu	
287	292	297	302	
aaa cct tac gtg tgc	acc aag tgt ggg	aaa gct ttc agc	cac agc tca	1139
Lys Pro Tyr Val Cys	Thr Lys Cys Gly	Lys Ala Phe Ser	His Ser Ser	
303	308	313	318	
aac ctc acc ctc cac	tac aga aca cac	ttg gtg gac cgg	ccc tat gac	1187
Asn Leu Thr Leu His	Tyr Arg Thr His	Leu Val Asp Arg	Pro Tyr Asp	
319	324	329	334	
tgt aag tgt gga aaa	gct ttt ggg cag	agc tca gac ctt	ctt aaa cat	1235
Cys Lys Cys Gly Lys	Ala Phe Gly Gln	Ser Ser Asp Leu	Leu Lys His	
335	340	345	350	
cag aga atg cac aca	gaa gag gcg cca	tat cag tgc aaa	gat tgt ggc	1283
Gln Arg Met His Thr	Glu Glu Ala Pro	Tyr Gln Cys Lys	Asp Cys Gly	
351	356	361	366	
aag gct ttc agc ggg	aaa ggc agc ctc	att cgt cac tat	cgg atc cac	1331
Lys Ala Phe Ser Gly	Lys Gly Ser Leu	Ile Arg His Tyr	Arg Ile His	
367	372	377	382	
act ggg gag aag cct	tat cag tgt aac	gaa tgt ggg aag	agc ttc agt	1379
Thr Gly Glu Lys Pro	Tyr Gln Cys Asn	Glu Cys Gly Lys	Ser Phe Ser	
383	388	393	398	
cag cat gcg ggc ctc	agc tcc cac cag	aga ctc cac acc	gga gag aag	1427
Gln His Ala Gly Leu	Ser Ser His Gln	Arg Leu His Thr	Gly Glu Lys	
399	404	409	414	
cca tat aag tgt aag	gag tgt ggg aaa	gcc ttc aac cac	agc tcc aac	1475
Pro Tyr Lys Cys Lys	Glu Cys Gly Lys	Ala Phe Asn His	Ser Ser Asn	
415	420	425	430	

tcc aag gca gct gca gat ttg atg gcc tac tgt gaa gca cat gcc aag	445
Ser Lys Ala Ala Ala Asp Leu Met Ala Tyr Cys Glu Ala His Ala Lys	
31 36 41 46	
gaa gac ccc ctc ctg acc cct gtt ccg gct tca gaa aac ccg ttt agg	493
Glu Asp Pro Leu Leu Thr Pro Val Pro Ala Ser Glu Asn Pro Phe Arg	
47 52 57 62	
gag aag aag ttt ttc tgt gcc atc ctt taa g tctttgagag gggcctgaag	544
Glu Lys Lys Phe Phe Cys Ala Ile Leu *	
63 68	
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ccacggcatt tgaagagagc gaggagaacc attctggaaa ctctaggcta tgcattgttta	664
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taatggcatt gatgtatagt cactgtgcct ttctttttct ttcttccttc tcctctaccc	1024
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aaaaaaaaaa aa	1276

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<400> 913

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	Met Ala Ser Trp Pro Ser	

1

gtc tac cac gta gtg agc ggg aag atg ctg atc ctt tac gac aaa gac	160
Val Tyr His Val Val Ser Gly Lys Met Leu Ile Leu Tyr Asp Lys Asp	
7 12 17 22	
ccc tgc tcc cct gtt tct gtg ccc tac ttg agt cct cta gta ctc cgt	208
Pro Cys Ser Pro Val Ser Val Pro Tyr Leu Ser Pro Leu Val Leu Arg	
23 28 33 38	
aaa gaa ctt gaa tct ttg cta gaa aat gaa ggt gat cag gtg att cat	256
Lys Glu Leu Glu Ser Leu Leu Glu Asn Glu Gly Asp Gln Val Ile His	
39 44 49 54	
aca tct tct ttc atc aat caa cat cca atc att ttc tgg acc ctc gtt	304
Thr Ser Ser Phe Ile Asn Gln His Pro Ile Ile Phe Trp Thr Leu Val	
55 60 65 70	
tgg tat ttc aga cgt ttg gac ctt cct agt aac ttg cca gga ctt atc	352
Trp Tyr Phe Arg Arg Leu Asp Leu Pro Ser Asn Leu Pro Gly Leu Ile	
71 76 81 86	
ctc aca tct gaa cat tgt aat gaa ggt gta cag ctt cct ctg tca tct	400
Leu Thr Ser Glu His Cys Asn Glu Gly Val Gln Leu Pro Leu Ser Ser	
87 92 97 102	
ctg tcc cag gat agc aaa ctt gtg tat att cag ctg tta tgg gat aat	448
Leu Ser Gln Asp Ser Lys Leu Val Tyr Ile Gln Leu Leu Trp Asp Asn	
103 108 113 118	
atc aac ctt cat cag gaa cca aga gaa cct ctg tat gtc tca tgg agg	496
Ile Asn Leu His Gln Glu Pro Arg Glu Pro Leu Tyr Val Ser Trp Arg	
119 124 129 134	
aat ttt aat tct gaa aag aaa tca tct ctc ctg tca gag gaa caa caa	544
Asn Phe Asn Ser Glu Lys Lys Ser Ser Leu Leu Ser Glu Glu Gln Gln	
135 140 145 150	
gaa aca agc act tta gta gaa acc atc agg cag agt att cag cac aat	592
Glu Thr Ser Thr Leu Val Glu Thr Ile Arg Gln Ser Ile Gln His Asn	
151 156 161 166	
aat gtt ctt aaa ccc atc aac cta ctt tca cag caa atg aag cca ggc	640
Asn Val Leu Lys Pro Ile Asn Leu Leu Ser Gln Gln Met Lys Pro Gly	
167 172 177 182	
atg aaa aga caa agg agt tta tac aga gaa atc ctc ttc tta tca tta	688
Met Lys Arg Gln Arg Ser Leu Tyr Arg Glu Ile Leu Phe Leu Ser Leu	
183 188 193 198	
gtg tct cta gga aga gag aat att gat att gag gca ttt gac aat gaa	736
Val Ser Leu Gly Arg Glu Asn Ile Asp Ile Glu Ala Phe Asp Asn Glu	
199 204 209 214	
tat gga att gca tac aat agt ctg tct tca gag att ctt gaa agg ttg	784
Tyr Gly Ile Ala Tyr Asn Ser Leu Ser Ser Glu Ile Leu Glu Arg Leu	
215 220 225 230	

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self	effort	energy	activity	strength	power	force	will
自己	努力	エネルギー	活動性	力強さ	力	力	意志
jiko	doori	enēgi	katsudō	ryōkasa	rīki	rikki	ishiki
じこ	どおり	えねぎ	かつどう	りょうさ	りき	りき	いしき
zich	doori	enēgi	katsudo	ryoosa	riki	riki	isshiki
zich	dōrī	enēgi	katsūdō	ryōsa	riki	riki	i-shiki

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gcc ctg tgg tca gcc agc ttg agg ctg ggc act tct tcg atg cat cca	874
Ala Leu Trp Ser Ala Ser Leu Arg Leu Gly Thr Ser Ser Met His Pro	
17 22 27 32	
tca cca aga agc atc tct ttg cct ctg tcc atg atg ctg tca cct ttg	922
Ser Pro Arg Ser Ile Ser Leu Pro Leu Ser Met Met Leu Ser Pro Leu	
33 38 43 48	
ccc tcc aac acc cga ggc ctg tcc ccg aca gcc ctg ttt cgg tca cca	970
Pro Ser Asn Thr Arg Gly Leu Ser Pro Thr Ala Leu Phe Arg Ser Pro	
49 54 59 64	
gac tct gaa cat gct aca tcc tgc cca aga ctg cac ctc tgg agg tgc	1018
Asp Ser Glu His Ala Thr Ser Cys Pro Arg Leu His Leu Trp Arg Cys	
65 70 75 80	
agg gca ccc ttg aga agc ccc tca ccc cta ggc cgc ctc cag gtg cta	1066
Arg Ala Pro Leu Arg Ser Pro Ser Pro Leu Gly Arg Leu Gln Val Leu	
81 86 91 96	
ccc agg agt ccc ctc cat gta cac aca cac aac tca ggg aag gag gtc	1114
Pro Arg Ser Pro Leu His Val His Thr His Asn Ser Gly Lys Glu Val	
97 102 107 112	
ctg gga ctc caa gtt cag cgc tcc agg tct ggg aca ggg cct gca tgc	1162
Leu Gly Leu Gln Val Gln Arg Ser Arg Ser Gly Thr Gly Pro Ala Cys	
113 118 123 128	
agt cag gct ggc agt ggc gcg gta cag gga ggg aac tgg tgc ata ttt	1210
Ser Gln Ala Gly Ser Gly Ala Val Gln Gly Gly Asn Trp Cys Ile Phe	
129 134 139 144	
tag cctc aggaatanag ctaaataaat aaataaataa ataaataaat aaatagtatg	1267
* 145	
attcttctat gaaatcaggt gaattttata atacgaaact caccatgaaa atatgacttt	1327
caaatttcaa aaatccatcc tgacacagtg gctcaagtct taggccagct actcgggggg	1387
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agcggcgggt tccccgggat cgagggacgc gcacgccaga ggagacgaaa ggaacccggg	180
tcggaccaga tcggaaccac tgaccattgc cc atg gcg gcc cta ggc cct agc	233
Met Ala Ala Leu Gly Pro Ser	
1 5	
agc cag aat gtc act gaa tac gtc gtt cga gtt cct aag aat aca acc	281
Ser Gln Asn Val Thr Glu Tyr Val Val Arg Val Pro Lys Asn Thr Thr	
8 13 18 23	
aaa aaa tat aac atc atg gct ttt aat gca gcc gac aaa gtc aac ttt	329
Lys Lys Tyr Asn Ile Met Ala Phe Asn Ala Ala Asp Lys Val Asn Phe	
24 29 34 39	
gct acg tgg aat cag gct cgg ctg gag cgg gac ttg agc aac aag aaa	377
Ala Thr Trp Asn Gln Ala Arg Leu Glu Arg Asp Leu Ser Asn Lys Lys	
40 45 50 55	
atc tac caa gag gag gag atg ccc gaa tcg ggc gcg ggc agt gag ttc	425
Ile Tyr Gln Glu Glu Glu Met Pro Glu Ser Gly Ala Gly Ser Glu Phe	
56 61 66 71	
aac cgc aag ctt cgg gag gag gct cgg agg aag aag tac ggc atc gtc	473
Asn Arg Lys Leu Arg Glu Glu Ala Arg Arg Lys Lys Tyr Gly Ile Val	
72 77 82 87	
ctc aag gag ttc cgg ccc gag gac cag ccc tgg ctg ctc cgg gtc aac	521
Leu Lys Glu Phe Arg Pro Glu Asp Gln Pro Trp Leu Leu Arg Val Asn	
88 93 98 103	
ggc aaa tca ggc agg aag ttc aag ggc atc aag aag gga ggc gta aca	569
Gly Lys Ser Gly Arg Lys Phe Lys Gly Ile Lys Lys Gly Gly Val Thr	
104 109 114 119	
gag aac acg tcc tac tac atc ttc acc cag tgc ccc gac ggg gcc ttc	617
Glu Asn Thr Ser Tyr Tyr Ile Phe Thr Gln Cys Pro Asp Gly Ala Phe	
120 125 130 135	
gag gcc ttc ccc gtg cac aac tgg tac aat ttc aca ccg ctg gcc cgg	665
Glu Ala Phe Pro Val His Asn Trp Tyr Asn Phe Thr Pro Leu Ala Arg	
136 141 146 151	
cat cgc acg ctc act gcc gag gag gcc gag gag gag tgg gag agg agg	713
His Arg Thr Leu Thr Ala Glu Glu Ala Glu Glu Glu Trp Glu Arg Arg	
152 157 162 167	
aac aag gtg ctg aac cac ttc agc atc atg cag cag cgg cgg ctc aag	761
Asn Lys Val Leu Asn His Phe Ser Ile Met Gln Gln Arg Arg Leu Lys	
168 173 178 183	
gat cag gac cag gac gag gat gag gag gag aag gag aaa cgt ggc cgc	809
Asp Gln Asp Gln Asp Glu Asp Glu Glu Glu Lys Glu Lys Arg Gly Arg	
184 189 194 199	

agg aag gcg agc gag ctg cgc atc cac gac ctg gag gac gac ctg gag	857
Arg Lys Ala Ser Glu Leu Arg Ile His Asp Leu Glu Asp Asp Leu Glu	
200 205 210 215	
atg tcg tcc gat gcc agt gat gcc agt ggt gag gag ggg ggc aga gtc	905
Met Ser Ser Asp Ala Ser Asp Ala Ser Gly Glu Glu Gly Gly Arg Val	
216 221 226 231	
ccc aag gcc aag aag aag gcg ccg ctg gcc aag ggc ggc agg aaa aag	953
Pro Lys Ala Lys Lys Lys Ala Pro Leu Ala Lys Gly Gly Arg Lys Lys	
232 237 242 247	
aag aag aag aag ggt tca gac gac gag gcc ttc gag gac agc gat gat	1001
Lys Lys Lys Lys Gly Ser Asp Asp Glu Ala Phe Glu Asp Ser Asp Asp	
248 253 258 263	
ggg gac ttc gag ggc caa gag gtg gac tac atg tca gac ggc tcc agt	1049
Gly Asp Phe Glu Gly Gln Glu Val Asp Tyr Met Ser Asp Gly Ser Ser	
264 269 274 279	
agc tcc caa gaa gag cct gag agc aag gcc aag gcg ccg cag cag gag	1097
Ser Ser Gln Glu Glu Pro Glu Ser Lys Ala Lys Ala Pro Gln Gln Glu	
280 285 290 295	
gag ggg ccc aag ggt gtc gat gag cag agc gac agt agt gag gag agt	1145
Glu Gly Pro Lys Gly Val Asp Glu Gln Ser Asp Ser Ser Glu Glu Ser	
296 301 306 311	
gag gag gag aag ccg cct gag gag gac aag gag gag gag gag gag aag	1193
Glu Glu Glu Lys Pro Pro Glu Glu Asp Lys Glu Glu Glu Glu Glu Lys	
312 317 322 327	
aag gca ccc acc ccg cag gag aag aag cgc agg aaa gac agc agc gag	1241
Lys Ala Pro Thr Pro Gln Glu Lys Lys Arg Arg Lys Asp Ser Ser Glu	
328 333 338 343	
gag tcg gac agc tca gag gag agc gac att gac agc gag gcc tcc tca	1289
Glu Ser Asp Ser Ser Glu Glu Ser Asp Ile Asp Ser Glu Ala Ser Ser	
344 349 354 359	
gcc ctc ttc atg gcg aag aag aag acg cca ccc aag aga gag cgg aag	1337
Ala Leu Phe Met Ala Lys Lys Lys Thr Pro Pro Lys Arg Glu Arg Lys	
360 365 370 375	
ccg tcg gga ggg agc tca agg ggc aac agc cgc cca ggc acg ccc agc	1385
Pro Ser Gly Gly Ser Ser Arg Gly Asn Ser Arg Pro Gly Thr Pro Ser	
376 381 386 391	
gca gag ggt ggc agc acc tcc tcc acc ctg cgg gcg gct gcc agc aaa	1433
Ala Glu Gly Gly Ser Thr Ser Ser Thr Leu Arg Ala Ala Ala Ser Lys	
392 397 402 407	
ctc gag caa ggg aag cgg gtg agc gag atg cct gca gcc aag cgg ttg	1481
Leu Glu Gln Gly Lys Arg Val Ser Glu Met Pro Ala Ala Lys Arg Leu	
408 413 418 423	

cgg ctg gac acg gga ccc cag agc ctg tct ggg aag tcg aca ccc cag	1529
Arg Leu Asp Thr Gly Pro Gln Ser Leu Ser Gly Lys Ser Thr Pro Gln	
424 429 434 439	
cca cca tca ggc aag aca aca ccc aac agc ggc gac gtg cag gtg act	1577
Pro Pro Ser Gly Lys Thr Thr Pro Asn Ser Gly Asp Val Gln Val Thr	
440 445 450 455	
gag gat gcc gtg cgc cgc tac ctg aca cgg aag ccc atg acc act aag	1625
Glu Asp Ala Val Arg Arg Tyr Leu Thr Arg Lys Pro Met Thr Thr Lys	
456 461 466 471	
gac ctg ctg aaa aag ttc cag acc aag aag aca ggg ctg agc agc gag	1673
Asp Leu Leu Lys Lys Phe Gln Thr Lys Lys Thr Gly Leu Ser Ser Glu	
472 477 482 487	
cag aca gtg aac gtg ttg gcc cag atc ctc aag cga ctc aac ccc gag	1721
Gln Thr Val Asn Val Leu Ala Gln Ile Leu Lys Arg Leu Asn Pro Glu	
488 493 498 503	
cgc aag atg atc aac gac aaa atg cac ttc tcc ctc aag gag tga ggc	1769
Arg Lys Met Ile Asn Asp Lys Met His Phe Ser Leu Lys Glu *	
504 509 514	
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cagtcccagc tacttgggag gctaagccca gttcaaggct gcagtgaact atgatggtgc	2249
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	Met Ala Asp Ser	
	1	
cgg gat ccc gcc agc gac cag atg cag cac tgg aag gag cag cgg gcc		162
Arg Asp Pro Ala Ser Asp Gln Met Gln His Trp Lys Glu Gln Arg Ala		
5 10 15 20		
gcg cag aaa gct gat gtc ctg acc act gga gct ggt aac cca gta gga		210
Ala Gln Lys Ala Asp Val Leu Thr Thr Gly Ala Gly Asn Pro Val Gly		
21 26 31 36		
gac aaa ctt aat gtt att aca gta ggg ccc cgt ggg ccc ctt ctt gtt		258
Asp Lys Leu Asn Val Ile Thr Val Gly Pro Arg Gly Pro Leu Leu Val		
37 42 47 52		
cag gat gtg gtt ttc act gat gaa atg gct cat ttt gac cga gag aga		306
Gln Asp Val Val Phe Thr Asp Glu Met Ala His Phe Asp Arg Glu Arg		
53 58 63 68		
att cct gag aga gtt gtg cat gct aaa gga gca ggg gcc ttt ggc tac		354
Ile Pro Glu Arg Val Val His Ala Lys Gly Ala Gly Ala Phe Gly Tyr		
69 74 79 84		
ttt gag gtc aca cat gac att acc aaa tac tcc aag gca aag gta ttt		402
Phe Glu Val Thr His Asp Ile Thr Lys Tyr Ser Lys Ala Lys Val Phe		
85 90 95 100		
gag cat att gga aag aag act ccc atc gca gtt cgg ttc tcc act gtt		450
Glu His Ile Gly Lys Lys Thr Pro Ile Ala Val Arg Phe Ser Thr Val		
101 106 111 116		
gct gga gaa tcg ggt tca gct gac aca gtt cgg gac cct cgt ggg ttt		498
Ala Gly Glu Ser Gly Ser Ala Asp Thr Val Arg Asp Pro Arg Gly Phe		
117 122 127 132		
gca gtg aaa ttt tac aca gaa gat ggt aac tgg gat ctc gtt gga aat		546
Ala Val Lys Phe Tyr Thr Glu Asp Gly Asn Trp Asp Leu Val Gly Asn		
133 138 143 148		
aac acc ccc att ttc ttc atc agg gat ccc ata ttg ttt cca tct ttt		594
Asn Thr Pro Ile Phe Phe Ile Arg Asp Pro Ile Leu Phe Pro Ser Phe		
149 154 159 164		
atc cac agc caa aag aga aat cct cag aca cat ctg aag gat ccg gac		642
Ile His Ser Gln Lys Arg Asn Pro Gln Thr His Leu Lys Asp Pro Asp		
165 170 175 180		
atg gtc tgg gac ttc tgg agc cta cgt cct gag tct ctg cat cag gtt		690
Met Val Trp Asp Phe Trp Ser Leu Arg Pro Glu Ser Leu His Gln Val		
181 186 191 196		
tct ttc ttg ttc agt gat cgg ggg att cca gat gga cat cgc cac atg		738
Ser Phe Leu Phe Ser Asp Arg Gly Ile Pro Asp Gly His Arg His Met		/
197 202 207 212		
aat gga tat gga tca cat act ttc aag ctg gtt aat gca aat ggg gag		786

437	442	447	452	
gag gaa cag agg aaa cgt ctg tgt gag aac att gcc ggc cac ctg aag				1506
Glu Glu Gln Arg Lys Arg Leu Cys Glu Asn Ile Ala Gly His Leu Lys				
453	458	463	468	
gat gca caa att ttc atc cag aag aaa gcg gtc aag aac ttc act gag				1554
Asp Ala Gln Ile Phe Ile Gln Lys Lys Ala Val Lys Asn Phe Thr Glu				
469	474	479	484	
gtc cac cct gac tac ggg agc cac atc cag gct ctt ctg gac aag tac				1602
Val His Pro Asp Tyr Gly Ser His Ile Gln Ala Leu Leu Asp Lys Tyr				
485	490	495	500	
aat gct gag aag cct aag aat gcg att cac acc ttt gtg cag tcc gga				1650
Asn Ala Glu Lys Pro Lys Asn Ala Ile His Thr Phe Val Gln Ser Gly				
501	506	511	516	
tct cac ttg gcg gca agg gag aag gca aat ctg tga ggcc ggggccctgc				1700
Ser His Leu Ala Ala Arg Glu Lys Ala Asn Leu *				
517	522	527		
acctgtgcag cgaagcttag cgttcatccg tgtaaccgc tcatcactgg atgaagattc				1760
tcctgtgcta gatgtgcaaa tgcaagctag tggcttcaaa atagagaatc ccactttcta				1820
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aacagtcatt taaaaaaaaa atttgttttg acggatgatt ggattattca tttaaaatga				1940
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gtatgtttac atatcacctc atggcctatt atattaaaat atggctataa atatataaaa				2060
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Met Pro Leu	
1	
tca gga acc ccg gcc cct aat aag aag agg aaa tcc agc aag ctg atc	163
Ser Gly Thr Pro Ala Pro Asn Lys Lys Arg Lys Ser Ser Lys Leu Ile	
4 9 14 19	
atg gaa ctc act gga ggt gga cag gag agc tca ggc ttg aac ctg ggc	211
Met Glu Leu Thr Gly Gly Gly Gln Glu Ser Ser Gly Leu Asn Leu Gly	
20 25 30 35	
aaa aag atc agt gtc cca agg gat gtg atg ttg gag gaa ctg tgc ctg	259
Lys Lys Ile Ser Val Pro Arg Asp Val Met Leu Glu Glu Leu Ser Leu	
36 41 46 51	
ctt acc aac cgg ggc tcc aag atg ttc aaa ctg cgg cag atg agg gtg	307
Leu Thr Asn Arg Gly Ser Lys Met Phe Lys Leu Arg Gln Met Arg Val	
52 57 62 67	
gag aag ttt att tat gag aac cac cct gat gtt ttc tct gac agc tca	355
Glu Lys Phe Ile Tyr Glu Asn His Pro Asp Val Phe Ser Asp Ser Ser	
68 73 78 83	
atg gat cac ttc cag aag ttc ctt cca aca gtg ggg gga cag ctg ggc	403
Met Asp His Phe Gln Lys Phe Leu Pro Thr Val Gly Gly Gln Leu Gly	
84 89 94 99	
aca gct ggt cag gga ttc tca tac agc aag agc aac ggc aga ggc ggc	451
Thr Ala Gly Gln Gly Phe Ser Tyr Ser Lys Ser Asn Gly Arg Gly Gly	
100 105 110 115	
agc cag gca ggg ggc agt ggc tct gcc gga cag tat ggc tct gat cag	499
Ser Gln Ala Gly Gly Ser Gly Ser Ala Gly Gln Tyr Gly Ser Asp Gln	
116 121 126 131	
cag cac cat ctg ggc tct ggg tct gga gct ggg ggt aca ggt ggt ccc	547
Gln His His Leu Gly Ser Gly Ser Gly Ala Gly Gly Thr Gly Gly Pro	
132 137 142 147	
gcg ggc cag gct ggc aga gga gga gct gct ggc aca gca ggg gtt ggt	595
Ala Gly Gln Ala Gly Arg Gly Gly Ala Ala Gly Thr Ala Gly Val Gly	
148 153 158 163	
gag aca gga tca gga gac cag gca ggc gga gaa gga aaa cat atc act	643
Glu Thr Gly Ser Gly Asp Gln Ala Gly Gly Glu Gly Lys His Ile Thr	
164 169 174 179	
gtg ttc aag acc tat att tcc cca tgg gag cga gcc atg ggg gtt gac	691
Val Phe Lys Thr Tyr Ile Ser Pro Trp Glu Arg Ala Met Gly Val Asp	
180 185 190 195	
ccc cag caa aaa atg gaa ctt ggc att gac ctg ctg gcc tat ggg gcc	739
Pro Gln Gln Lys Met Glu Leu Gly Ile Asp Leu Leu Ala Tyr Gly Ala	
196 201 206 211	

aaa gct gaa ctt ccc aaa tat aag tcc ttc aac agg acg gca atg ccc	787
Lys Ala Glu Leu Pro Lys Tyr Lys Ser Phe Asn Arg Thr Ala Met Pro	
212 217 222 227	
tat ggt gga tat gag aag gcc tcc aaa cgc atg acc ttc cag atg ccc	835
Tyr Gly Gly Tyr Glu Lys Ala Ser Lys Arg Met Thr Phe Gln Met Pro	
228 233 238 243	
aag ttt gac ctg ggg ccc ttg ctg agt gaa ccc ctg gtc ctc tac aac	883
Lys Phe Asp Leu Gly Pro Leu Leu Ser Glu Pro Leu Val Leu Tyr Asn	
244 249 254 259	
caa aac ctc tcc aac agg cct tct ttc aat cga acc cct att ccc tgg	931
Gln Asn Leu Ser Asn Arg Pro Ser Phe Asn Arg Thr Pro Ile Pro Trp	
260 265 270 275	
ctg agc tct ggg gag cct gta gac tac aac gtg gat att ggc atc ccc	979
Leu Ser Ser Gly Glu Pro Val Asp Tyr Asn Val Asp Ile Gly Ile Pro	
276 281 286 291	
ttg gat gga gaa aca gag gag ctg tga ggtgt ttcctcctct gatttgcac	1031
Leu Asp Gly Glu Thr Glu Glu Leu *	
292 297	
atttccccctc tctggctcca atttggagag ggaatgctga gcagatagcc cccattgtta	1091
atccagtatc cttatgggaa tggagggaaa aaggagagat ctacctttcc atcctttact	1151
ccaagtcctcc actccacgca tccttctctca ccaactcaga gctccccctc tacttgctcc	1211
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aggaaaatga aaaaaaaaaa aaaa	1295

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aca gct ggt tat aag acc ctt ctc aag tgc ctc tca ggt aaa ttc tgc	96
Thr Ala Gly Tyr Lys Thr Leu Leu Lys Cys Leu Ser Gly Lys Phe Cys	
17 22 27 32	
cgc cgg gag ctg att ggc atc atg ggc ccc tca ggg gct ggc aag tct	144

Arg	Arg	Glu	Leu	Ile	Gly	Ile	Met	Gly	Pro	Ser	Gly	Ala	Gly	Lys	Ser		
33					38					43					48		
aca	ttc	atg	aac	atc	ttg	gca	gga	tac	agg	gag	tct	gga	atg	aag	ggg	192	
Thr	Phe	Met	Asn	Ile	Leu	Ala	Gly	Tyr	Arg	Glu	Ser	Gly	Met	Lys	Gly		
49					54					59					64		
cag	atc	ctg	gtt	aat	gga	agg	cca	cgg	gag	ctg	agg	acc	ttc	cgc	aag	240	
Gln	Ile	Leu	Val	Asn	Gly	Arg	Pro	Arg	Glu	Leu	Arg	Thr	Phe	Arg	Lys		
65					70					75					80		
atg	tcc	tgc	tac	atc	atg	caa	gat	gac	atg	ctg	ctg	ccg	cac	ctc	acg	288	
Met	Ser	Cys	Tyr	Ile	Met	Gln	Asp	Asp	Met	Leu	Leu	Pro	His	Leu	Thr		
81					86					91					96		
gtg	ttg	gaa	gcc	atg	atg	gtc	tct	gct	aac	ctg	aag	ctg	agt	gag	aag	336	
Val	Leu	Glu	Ala	Met	Met	Val	Ser	Ala	Asn	Leu	Lys	Leu	Ser	Glu	Lys		
97					102					107					112		
cag	gag	gtg	aag	aag	gag	ctg	gtg	aca	gag	atc	ctg	acg	gca	ctg	ggc	384	
Gln	Glu	Val	Lys	Lys	Glu	Leu	Val	Thr	Glu	Ile	Leu	Thr	Ala	Leu	Gly		
113					118					123					128		
ctg	atg	tgc	tgc	tcc	cac	acg	agg	aca	gcc	ctg	ctc	tct	ggc	ggg	cag	432	
Leu	Met	Ser	Cys	Ser	His	Thr	Arg	Thr	Ala	Leu	Leu	Ser	Gly	Gly	Gln		
129					134					139					144		
agg	aag	cgt	ctg	gcc	atc	gcc	ctg	gag	ctg	gtc	aac	aac	ccg	cct	gtc	480	
Arg	Lys	Arg	Leu	Ala	Ile	Ala	Leu	Glu	Leu	Val	Asn	Asn	Pro	Pro	Val		
145					150					155					160		
atg	ttc	ttt	gat	gag	ccc	acc	agt	ggc	ctg	gat	agc	gcc	tct	tgt	ttc	528	
Met	Phe	Phe	Asp	Glu	Pro	Thr	Ser	Gly	Leu	Asp	Ser	Ala	Ser	Cys	Phe		
161					166					171					176		
caa	gtg	gtg	tcc	ctc	atg	aag	tcc	ctg	gca	cag	ggg	ggc	cgt	acc	atc	576	
Gln	Val	Val	Ser	Leu	Met	Lys	Ser	Leu	Ala	Gln	Gly	Gly	Arg	Thr	Ile		
177					182					187					192		
atc	tgc	acc	atc	cac	cag	ccc	agt	gcc	aag	ctc	ttt	gag	atg	ttt	gac	624	
Ile	Cys	Thr	Ile	His	Gln	Pro	Ser	Ala	Lys	Leu	Phe	Glu	Met	Phe	Asp		
193					198					203					208		
aag	tgc	atc	ttc	aaa	ggc	gtg	gtc	acc	aac	ctg	atc	ccc	tat	cta	aag	672	
Lys	Cys	Ile	Phe	Lys	Gly	Val	Val	Thr	Asn	Leu	Ile	Pro	Tyr	Leu	Lys		
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Gly	Leu	Gly	Leu	His	Cys	Pro	Thr	Tyr	His	Asn	Pro	Ala	Asp	Phe	Ile		
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Ile	Glu	Val	Ala	Ser	Gly	Glu	Tyr	Gly	Asp	Leu	Asn	Pro	Met	Leu	Phe		
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agg	gct	gtg	cag	aat	ggg	ctg	tgc	gct	atg	gct	gag	aag	aag	agc	agc	816	
Arg	Ala	Val	Gln	Asn	Gly	Leu	Cys	Ala	Met	Ala	Glu	Lys	Lys	Ser	Ser		

257	262	267	272	
cct gag aag aac gag gtc cct gcc cca tgc cct cct tgt cct ccg gaa				864
Pro Glu Lys Asn Glu Val Pro Ala Pro Cys Pro Pro Cys Pro Pro Glu				
273	278	283	288	
gtg gat ccc att gaa agc cac acc ttt gcc acc agc acc ctc aca cag				912
Val Asp Pro Ile Glu Ser His Thr Phe Ala Thr Ser Thr Leu Thr Gln				
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ttc tgc atc ctc ttc aag agg acc ttc ctg tcc atc ctc agg gac acg				960
Phe Cys Ile Leu Phe Lys Arg Thr Phe Leu Ser Ile Leu Arg Asp Thr				
305	310	315	320	
gtg gtg tgt ccg gtg gtc tac tgc agc att gtg tac tgg atg acg ggc				1008
Val Val Cys Pro Val Val Tyr Cys Ser Ile Val Tyr Trp Met Thr Gly				
321	326	331	336	
cag ccc gct gag acc agc cgc ttc ctg ctc ttc tca gcc ctg gcc acc				1056
Gln Pro Ala Glu Thr Ser Arg Phe Leu Leu Phe Ser Ala Leu Ala Thr				
337	342	347	352	
gcc acc gcc ttg gtg gcc caa tct ttg ggg ctg ctg atc gga gct gct				1104
Ala Thr Ala Leu Val Ala Gln Ser Leu Gly Leu Leu Ile Gly Ala Ala				
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tcc aac tcc cta cag gtg gcc act ttt gtg ggc cca gtt acc gcc atc				1152
Ser Asn Ser Leu Gln Val Ala Thr Phe Val Gly Pro Val Thr Ala Ile				
369	374	379	384	
cct gtc ctc ttg ttc tcc ggc ttc ttt gtc agc ttc aag acc atc ccc				1200
Pro Val Leu Leu Phe Ser Gly Phe Phe Val Ser Phe Lys Thr Ile Pro				
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act tac ctg caa tgg agc tcc tat ctc tcc tat gtc agg tat ggc ttt				1248
Thr Tyr Leu Gln Trp Ser Ser Tyr Leu Ser Tyr Val Arg Tyr Gly Phe				
401	406	411	416	
gag ggt gtg atc ctg acg atc tat ggc atg gag cga gga gac ctg aca				1296
Glu Gly Val Ile Leu Thr Ile Tyr Gly Met Glu Arg Gly Asp Leu Thr				
417	422	427	432	
tgt tta gag gaa cgc tgc ccg ttc cgg gag cca cag agc atc ctc cga				1344
Cys Leu Glu Glu Arg Cys Pro Phe Arg Glu Pro Gln Ser Ile Leu Arg				
433	438	443	448	
gcg ctg gat gtg gag gat gcc aag ctc tac atg gac ttc ctg gtc ttg				1392
Ala Leu Asp Val Glu Asp Ala Lys Leu Tyr Met Asp Phe Leu Val Leu				
449	454	459	464	
ggc atc ttc ttc cta gcc ctg cgg ctg ctg gcc tac ctt gtg ctg cgt				1440
Gly Ile Phe Phe Leu Ala Leu Arg Leu Leu Ala Tyr Leu Val Leu Arg				
465	470	475	480	
tac cgg gaa tgt ggc ttt tgt tct ctg gac agt tct gct gac ctc atc				1488
Tyr Arg Glu Cys Gly Phe Cys Ser Leu Asp Ser Ser Ala Asp Leu Ile				
481	486	491	496	

cgc cat gtc tac ttc cac tgc tac cac acc aag ctg aaa cag tgg ggg	1536
Arg His Val Tyr Phe His Cys Tyr His Thr Lys Leu Lys Gln Trp Gly	
497 502 507 512	
ctg cag gcc ttg caa agc cag gct gac ctt ggc ccc tgc atc ctg gac	1584
Leu Gln Ala Leu Gln Ser Gln Ala Asp Leu Gly Pro Cys Ile Leu Asp	
513 518 523 528	
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Phe Gln Ser Arg Asn Val Ile Pro Asp Ile Pro Asp His Phe Leu Cys	
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Leu Trp Glu His Cys Glu Leu Pro Leu Ala Gln Asn Ser Phe Asp Asn	
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cct gag tgg ttt tat cgg cat gtg gaa gca cac agt ctg tgc tgt gaa	1728
Pro Glu Trp Phe Tyr Arg His Val Glu Ala His Ser Leu Cys Cys Glu	
561 566 571 576	
tac gaa gca gtc ggc aag gac aac ccg gtg gtg ctg tgt ggc tgg aaa	1776
Tyr Glu Ala Val Gly Lys Asp Asn Pro Val Val Leu Cys Gly Trp Lys	
577 582 587 592	
ggc tgt acc tgc acc ttc aag gac cgc agt aaa ctt cga gag cac ctc	1824
Gly Cys Thr Cys Thr Phe Lys Asp Arg Ser Lys Leu Arg Glu His Leu	
593 598 603 608	
cgc agc cat acc cag gag aaa gtg gta gcc tgc ccc acc tgt ggg ggc	1872
Arg Ser His Thr Gln Glu Lys Val Val Ala Cys Pro Thr Cys Gly Gly	
609 614 619 624	
atg ttt gcc aac aat acc aag ttc tta gat cac atc cgt cgc cag acc	1920
Met Phe Ala Asn Asn Thr Lys Phe Leu Asp His Ile Arg Arg Gln Thr	
625 630 635 640	
tca ttg gat cag cag cac ttc cag tgt tct cac tgt tcc aag aga ttt	1968
Ser Leu Asp Gln Gln His Phe Gln Cys Ser His Cys Ser Lys Arg Phe	
641 646 651 656	
gcc aca gag cgg cta ttg cgg gac cac atg cgc aac cat gtg aat cac	2016
Ala Thr Glu Arg Leu Leu Arg Asp His Met Arg Asn His Val Asn His	
657 662 667 672	
tat aag tgc cct ctg tgt gac atg acc tgc ccg ctg cct tcc tcc ctc	2064
Tyr Lys Cys Pro Leu Cys Asp Met Thr Cys Pro Leu Pro Ser Ser Leu	
673 678 683 688	
cgc aac cac atg cgc ttt cgt cac agt gag gac cgg ccc ttt aaa tgt	2112
Arg Asn His Met Arg Phe Arg His Ser Glu Asp Arg Pro Phe Lys Cys	
689 694 699 704	
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Asp Cys Cys Asp Tyr Ser Cys Lys Asn Leu Ile Asp Leu Gln Lys His	
705 710 715 720	

ctg gat acc cac agc gag gag cca gcc tac agg tgt gat ttt gag aac	2208
Leu Asp Thr His Ser Glu Glu Pro Ala Tyr Arg Cys Asp Phe Glu Asn	
721 726 731 736	
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Cys Thr Phe Ser Ala Arg Ser Leu Cys Ser Ile Lys Ser His Tyr Arg	
737 742 747 752	
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Lys Val His Glu Gly Asp Ser Glu Pro Arg Tyr Lys Cys His Val Cys	
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gac aaa tgc ttc aca cgg ggc aac aac ctc acc gtg cac ctt cgc aag	2352
Asp Lys Cys Phe Thr Arg Gly Asn Asn Leu Thr Val His Leu Arg Lys	
769 774 779 784	
aag cac cag ttc aag tgg ccc tca ggg cat ccc cgt ttt cgg tac aag	2400
Lys His Gln Phe Lys Trp Pro Ser Gly His Pro Arg Phe Arg Tyr Lys	
785 790 795 800	
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Glu His Glu Asp Gly Tyr Met Arg Leu Gln Leu Val Arg Tyr Glu Ser	
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gta gag ctg aca cag caa ctg ctg cgg caa cca caa gag gga tgc ggc	2496
Val Glu Leu Thr Gln Gln Leu Leu Arg Gln Pro Gln Glu Gly Ser Gly	
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ctg gga acg tgc ctg aac gag agc agc ctg cag ggc att att cta gaa	2544
Leu Gly Thr Ser Leu Asn Glu Ser Ser Leu Gln Gly Ile Ile Leu Glu	
833 838 843 848	
aca gtg cca ggg gag cca gga cgt aag gaa gag gaa gag gag ggc aag	2592
Thr Val Pro Gly Glu Pro Gly Arg Lys Glu Glu Glu Glu Glu Gly Lys	
849 854 859 864	
ggt agc gaa ggg aca gcc ctc tca gcc tct cag gac aac ccc agt tct	2640
Gly Ser Glu Gly Thr Ala Leu Ser Ala Ser Gln Asp Asn Pro Ser Ser	
865 870 875 880	
gtc atc cac gtg gtg aat cag acc aat gcc caa ggc cag caa gag att	2688
Val Ile His Val Val Asn Gln Thr Asn Ala Gln Gly Gln Gln Glu Ile	
881 886 891 896	
gtc tac tat gtg ctg tct gaa gcc cca ggg gag cct ccc cca gtc cct	2736
Val Tyr Tyr Val Leu Ser Glu Ala Pro Gly Glu Pro Pro Pro Val Pro	
897 902 907 912	
gag cca cct tca ggg ggc atc atg gaa aag ctt caa gga ata gct gag	2784
Glu Pro Pro Ser Gly Gly Ile Met Glu Lys Leu Gln Gly Ile Ala Glu	
913 918 923 928	
gag cca gag atc cag atg gtt tga aggccgcaga gccagaccat ttcttcccca	2838
Glu Pro Glu Ile Gln Met Val *	/
929 934	
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ccttcttggt agaggcgggt tccctccctc ggcaag atg ccg gag tgc tgg gat 174
Met Pro Glu Cys Trp Asp
1

ggg gaa cat gac atc gag aca ccc tac ggc ctt ctg cat gta gtg atc 222
Gly Glu His Asp Ile Glu Thr Pro Tyr Gly Leu Leu His Val Val Ile
7 12 17 22

cgg ggc tcc ccc aag ggg aac cgc cca gcc atc ctc acc tac cat gat 270
Arg Gly Ser Pro Lys Gly Asn Arg Pro Ala Ile Leu Thr Tyr His Asp
23 28 33 38

gtg ggc ctc aac cac aaa cta tgc ttc aac acc ttc ttc aac ttc gag 318
Val Gly Leu Asn His Lys Leu Cys Phe Asn Thr Phe Phe Asn Phe Glu
39 44 49 54

gac atg cag gag atc acc aag cac ttt gtg gtg tgt cac gtg gat gcc 366
Asp Met Gln Glu Ile Thr Lys His Phe Val Val Cys His Val Asp Ala
55 60 65 70

cct gga caa cag gtg ggg gcg tgc cag ttt cct cag ggg tac cag ttc 414
Pro Gly Gln Gln Val Gly Ala Ser Gln Phe Pro Gln Gly Tyr Gln Phe
71 76 81 86

ccc tcc atg gag cag ctg gct gcc atg ctc	ccc agc gtg gtg cag cat	462
Pro Ser Met Glu Gln Leu Ala Ala Met Leu	Pro Ser Val Val Gln His	
87	92 97 102	
ttc ggg ttc aag tat gtg att ggc atc gga	gtg ggc gcc gga gcc tat	510
Phe Gly Phe Lys Tyr Val Ile Gly Ile Gly	Val Gly Ala Gly Ala Tyr	
103	108 113 118	
gtg ctg gcc aag ttt gca ctc atc ttc ccc	gac ctg gtg gag ggg ctg	558
Val Leu Ala Lys Phe Ala Leu Ile Phe Pro	Asp Leu Val Glu Gly Leu	
119	124 129 134	
gtg ctg gtg aac atc gac ccc aat ggc aaa	ggc tgg ata gac tgg gct	606
Val Leu Val Asn Ile Asp Pro Asn Gly Lys	Gly Trp Ile Asp Trp Ala	
135	140 145 150	
gcc acc aag ctc tcc ggc cta act agc act	tta ccc gac acg gtg ctc	654
Ala Thr Lys Leu Ser Gly Leu Thr Ser Thr	Leu Pro Asp Thr Val Leu	
151	156 161 166	
tcc cac ctc ttc agc cag gag gag ctg gtg	aac aac aca gag ttg gtg	702
Ser His Leu Phe Ser Gln Glu Glu Leu Val	Asn Asn Thr Glu Leu Val	
167	172 177 182	
cag agc tac cgg cag cag att ggg aac gta	gtg aac cag gcc aac ctg	750
Gln Ser Tyr Arg Gln Gln Ile Gly Asn Val	Val Asn Gln Ala Asn Leu	
183	188 193 198	
cag ctc ttc tgg aac atg tac aac agc cgc	aga gac ctg gac att aac	798
Gln Leu Phe Trp Asn Met Tyr Asn Ser Arg	Arg Asp Leu Asp Ile Asn	
199	204 209 214	
cgg cct gga acg gtg ccc aat gcc aag acg	ctc cgc tgc ccc gtg atg	846
Arg Pro Gly Thr Val Pro Asn Ala Lys Thr	Leu Arg Cys Pro Val Met	
215	220 225 230	
ctg gtg gtt ggg gat aat gca ccc gct gag	gac ggg gtg gtg gag tgc	894
Leu Val Val Gly Asp Asn Ala Pro Ala Glu	Asp Gly Val Val Glu Cys	
231	236 241 246	
aac tcc aaa ctg gac ccg acc act acg acc	ttc ctg aag atg gca gac	942
Asn Ser Lys Leu Asp Pro Thr Thr Thr Thr	Phe Leu Lys Met Ala Asp	
247	252 257 262	
tct gga ggg ctg ccc cag gtc aca cag cca	ggg aag ctg act gaa gcc	990
Ser Gly Gly Leu Pro Gln Val Thr Gln Pro	Gly Lys Leu Thr Glu Ala	
263	268 273 278	
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Phe Lys Tyr Phe Leu Gln Gly Met Gly Tyr	Met Pro Ser Ala Ser Met	
279	284 289 294	
acc cgc ctg gca cgc tcc cgc act gca tcc	ctc acc agt gcc agc tcg	1086
Thr Arg Leu Ala Arg Ser Arg Thr Ala Ser	Leu Thr Ser Ala Ser Ser	
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Val Asp Gly Ser Arg Pro Gln Ala Cys Thr His Ser Glu Ser Ser Glu	
311 316 321 326	
ggg ctg ggc cag gtc aac cac acc atg gag gtg tcc tgt tga agccctt	1183
Gly Leu Gly Gln Val Asn His Thr Met Glu Val Ser Cys *	
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cag ctc ctg gaa ctc cgg aca aac aac tac cag ctt tca gat gaa cta 155
Gln Leu Leu Glu Leu Arg Thr Asn Asn Tyr Gln Leu Ser Asp Glu Leu
  16          21          26          31

cgc aag aat ggt gtt gaa ctc acc agt ctt cga cag aag gtc gcc tac 203
Arg Lys Asn Gly Val Glu Leu Thr Ser Leu Arg Gln Lys Val Ala Tyr
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ttg gat aag gag ttc agc aaa gct cag aag gca ctg agc aag agc aag 251
Leu Asp Lys Glu Phe Ser Lys Ala Gln Lys Ala Leu Ser Lys Ser Lys
  48          53          58          63

aaa gct cag gaa gtc gag gta ttg ctg agt gaa aat gag atg ctg cag 299
Lys Ala Gln Glu Val Glu Val Leu Leu Ser Glu Asn Glu Met Leu Gln
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gca aag ctg cac agc cag gag gag gac ttc cgt ttg cag aac agc aca 347

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Leu	Met	Ala	Glu	Phe	Ser	Lys	Val	Leu	Val	Pro	Gly	Ile	Val	Lys	Gly		
96					101					106					111		
gaa	atg	agg	ggt	agg	ggt	cat	ctg	ggc	tga	a	acctaacagc	ggcagagagt				446	
Glu	Met	Arg	Gly	Arg	Gly	His	Leu	Gly	*								
112					117												
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cagtagctgc	tggaataatt	cctggcggct	aaaggtggcc	attgcagacc	cccacgg											777	
atg gat ggc	cag atg gat	aga tct ggc	agg aaa gaa	gcc gtg gtc	ctg											825	
Met Asp Gly	Gln Met Asp	Arg Ser Gly	Arg Lys Glu	Ala Val Val	Leu												

1	5	10	15	
ggg acc gag gac gcg ctg ccg ccg ccg ctg cct cct ccg ggc agc ctc				873
Gly Thr Glu Asp Ala Leu Pro Pro Pro Leu Pro Pro Pro Gly Ser Leu				
17	22	27	32	
tac cac ttc ttc cag ctg cac atg gtt tgg gtc gtg ctg ctc agc ctc				921
Tyr His Phe Phe Gln Leu His Met Val Trp Val Val Leu Leu Ser Leu				
33	38	43	48	
ctg tgc tac ctc gtg ctg ttc ctc tgc cga cat tcc tcc cat cga ggc				969
Leu Cys Tyr Leu Val Leu Phe Leu Cys Arg His Ser Ser His Arg Gly				
49	54	59	64	
gtc ttc cta tcc gtc acc atc ctc atc tac cta ctc atg ggt gag atg				1017
Val Phe Leu Ser Val Thr Ile Leu Ile Tyr Leu Leu Met Gly Glu Met				
65	70	75	80	
cac atg gta gac acc gtg aca tgg cac aag atg cga ggg gca cag atg				1065
His Met Val Asp Thr Val Thr Trp His Lys Met Arg Gly Ala Gln Met				
81	86	91	96	
att gtg gcc atg aag gca gtg tct ctg ggc ttc gac ctg gac cgg ggc				1113
Ile Val Ala Met Lys Ala Val Ser Leu Gly Phe Asp Leu Asp Arg Gly				
97	102	107	112	
gag gtg ggt acg gtg ccc tgc cca gtg gag ttc atg ggc tac ctc tac				1161
Glu Val Gly Thr Val Pro Ser Pro Val Glu Phe Met Gly Tyr Leu Tyr				
113	118	123	128	
ttc gtg ggc acc atc gtc ttc ggg ccc tgg ata tcc ttc cac agc tac				1209
Phe Val Gly Thr Ile Val Phe Gly Pro Trp Ile Ser Phe His Ser Tyr				
129	134	139	144	
cta caa gct gtc caa ggc cgc cca ctg agc tgc cgg tgg ctg cag aag				1257
Leu Gln Ala Val Gln Gly Arg Pro Leu Ser Cys Arg Trp Leu Gln Lys				
145	150	155	160	
gtg gcc cgg agc ctg gca ctg gcc ctg ctg tgc ctt gtg ctg tcc act				1305
Val Ala Arg Ser Leu Ala Leu Ala Leu Leu Cys Leu Val Leu Ser Thr				
161	166	171	176	
tgc gtg ggc ccc tac ctc ttc ccg tac ttc atc ccc ctc aac ggt gac				1353
Cys Val Gly Pro Tyr Leu Phe Pro Tyr Phe Ile Pro Leu Asn Gly Asp				
177	182	187	192	
cgc ctc ctt cgc aac aag aaa cgc aaa gcc agg ggc acc atg gta agg				1401
Arg Leu Leu Arg Asn Lys Lys Arg Lys Ala Arg Gly Thr Met Val Arg				
193	198	203	208	
tgg ctg cga gcc tac gag agt gct gtc tcc ttc cac ttc agc aac tat				1449
Trp Leu Arg Ala Tyr Glu Ser Ala Val Ser Phe His Phe Ser Asn Tyr				
209	214	219	224	
ttt gtg ggc ttt ctt tcc gag gcc acg gcc acg ttg gcg ggg gct ggc				1497
Phe Val Gly Phe Leu Ser Glu Ala Thr Ala Thr Leu Ala Gly Ala Gly				
225	230	235	240	

ttt acc gag gag aag gat cac ctg gaa tgg gac ctg acg gtg tcc aag Phe Thr Glu Glu Lys Asp His Leu Glu Trp Asp Leu Thr Val Ser Lys 241 246 251 256	1545
cca ctg aat gtg gag ctg cct cgg tca atg gtg gaa gtt gtc aca agc Pro Leu Asn Val Glu Leu Pro Arg Ser Met Val Glu Val Val Thr Ser 257 262 267 272	1593
tgg aac ctg ccc atg tct tat tgg cta aat aac tat gtt ttc aag aat Trp Asn Leu Pro Met Ser Tyr Trp Leu Asn Asn Tyr Val Phe Lys Asn 273 278 283 288	1641
gct ctc cgc ctg ggg acc ttc tcg gct gtg ctg gtc acc tat gca gcc Ala Leu Arg Leu Gly Thr Phe Ser Ala Val Leu Val Thr Tyr Ala Ala 289 294 299 304	1689
agc gcc ctc cta cat ggc ttc agt ttc cac ctg gct gcg gtc ctg ctg Ser Ala Leu Leu His Gly Phe Ser Phe His Leu Ala Ala Val Leu Leu 305 310 315 320	1737
tcc ctg gct ttt atc act tac gtg gag cat gtc ctc cgg aag cgc ctg Ser Leu Ala Phe Ile Thr Tyr Val Glu His Val Leu Arg Lys Arg Leu 321 326 331 336	1785
gct cgg atc ctc agt gcc tgt gtc ttg tca aag cgg tgc ccg cca gac Ala Arg Ile Leu Ser Ala Cys Val Leu Ser Lys Arg Cys Pro Pro Asp 337 342 347 352	1833
tgt tcg cac cag cat cgc ttg ggc ctg ggg gtg cga gcc tta aac ttg Cys Ser His Gln His Arg Leu Gly Leu Gly Val Arg Ala Leu Asn Leu 353 358 363 368	1881
ctc ttt gga gct ctg gcc atc ttc cac ctg gcc tac ctg ggc tcc ctg Leu Phe Gly Ala Leu Ala Ile Phe His Leu Ala Tyr Leu Gly Ser Leu 369 374 379 384	1929
ttt gat gtc gat gtg gat gac acc aca gag gag cag ggc tac ggc atg Phe Asp Val Asp Val Asp Asp Thr Thr Glu Glu Gln Gly Tyr Gly Met 385 390 395 400	1977
gca tac act gtc cac aag tgg tca gag ctc agc tgg gcc agt cac tgg Ala Tyr Thr Val His Lys Trp Ser Glu Leu Ser Trp Ala Ser His Trp 401 406 411 416	2025
gtc act ttt gga tgc tgg atc ttc tac cgt ctc ata ggc tga ggggttac Val Thr Phe Gly Cys Trp Ile Phe Tyr Arg Leu Ile Gly * 417 422 427	2074
tctacctaaa aaagggcggg ggtgaaagga tgcaacgcaa cgctaatttc accagcggaa	2134
gaagcgggta cagaccttaa tgagtccccg ttttgatcga ctgataaggg aatggggaaa	2194
ttgaagccag gactcgatgc agattggcta cggatccaaa acgcccacta accttggcgc	2254
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 Met Phe Cys His Arg Asp Glu Tyr Phe Arg Gln Leu Leu
 1 5 10
 aga ggg gca gaa tca cca'aca cgc aat tca aaa ttg aac aga ggt agc 157
 Arg Gly Ala Glu Ser Pro Thr Arg Asn Ser Lys Leu Asn Arg Gly Ser
 14 19 24 29
 cta agt ttg gat gat ttt cgg aac aca cag aaa agg gga gaa tca ttt 205
 Leu Ser Leu Asp Asp Phe Arg Asn Thr Gln Lys Arg Gly Glu Ser Phe
 30 35 40 45
 gga atc agc aga ata ggt agc aaa att aaa gga gta ttc aaa agt acc 253
 Gly Ile Ser Arg Ile Gly Ser Lys Ile Lys Gly Val Phe Lys Ser Thr
 46 51 56 61
 aca atg gag gga gct atg ttg cct aat tat ggt gta gct gaa ggt gaa 301
 Thr Met Glu Gly Ala Met Leu Pro Asn Tyr Gly Val Ala Glu Gly Glu
 62 67 72 77
 gat gat ttt att gaa gaa ggt att gtt gta atg gaa gat gat tct cca 349
 Asp Asp Phe Ile Glu Glu Gly Ile Val Val Met Glu Asp Asp Ser Pro
 78 83 88 93
 gtg gag gct gtg agc aca cct aat act ccc cga aac ctt gct gca tgg 397
 Val Glu Ala Val Ser Thr Pro Asn Thr Pro Arg Asn Leu Ala Ala Trp
 94 99 104 109
 aaa att agc att cca tat gta gac ttt ttt gag gat ccc tcc tct gaa 445
 Lys Ile Ser Ile Pro Tyr Val Asp Phe Phe Glu Asp Pro Ser Ser Glu
 110 115 120 125
 agg aag gag aaa aaa gaa aga att cct gtg ttt tgt att gat gtt gaa 493
 Arg Lys Glu Lys Lys Glu Arg Ile Pro Val Phe Cys Ile Asp Val Glu
 126 131 136 141
 aga aat gat aga aga gca gtt gga cac gag cct gaa cat tgg tct gtc 541
 Arg Asn Asp Arg Arg Ala Val Gly His Glu Pro Glu His Trp Ser Val
 142 147 152 157
 tat aga aga tat ctt gaa ttc tat gta ctt gaa tca aaa cta aca gaa 589
 Tyr Arg Arg Tyr Leu Glu Phe Tyr Val Leu Glu Ser Lys Leu Thr Glu

158	163	168	173	
ttt cat ggt gca ttt cct gat gcc cag ctt cct tct aag agg atc att				637
Phe His Gly Ala Phe Pro Asp Ala Gln Leu Pro Ser Lys Arg Ile Ile				
174	179	184	189	
ggc ccc aaa aat tat gaa ttc tta aag tca aag agg gaa gag ttc caa				685
Gly Pro Lys Asn Tyr Glu Phe Leu Lys Ser Lys Arg Glu Glu Phe Gln				
190	195	200	205	
gaa tat cta cag aaa ctt ctg cag cat cca gaa ctg agt aat agt caa				733
Glu Tyr Leu Gln Lys Leu Leu Gln His Pro Glu Leu Ser Asn Ser Gln				
206	211	216	221	
ctt ctg gca gac ttt ctt tcc cct aat ggt ggg gaa aca caa ttt ctt				781
Leu Leu Ala Asp Phe Leu Ser Pro Asn Gly Gly Glu Thr Gln Phe Leu				
222	227	232	237	
gat aag ata cta cca gat gta aat ctt ggg aaa att ata aaa tct gtt				829
Asp Lys Ile Leu Pro Asp Val Asn Leu Gly Lys Ile Ile Lys Ser Val				
238	243	248	253	
cct gga aaa cta atg aaa gag aaa ggt cag cat ttg gaa cct ttt atc				877
Pro Gly Lys Leu Met Lys Glu Lys Gly Gln His Leu Glu Pro Phe Ile				
254	259	264	269	
atg aat ttc att aat tct tgt gag tct cca aag cct aaa cca agt aga				925
Met Asn Phe Ile Asn Ser Cys Glu Ser Pro Lys Pro Lys Pro Ser Arg				
270	275	280	285	
cca gaa ctg acc att ctc agc cct act tca gaa aac aac aag aag ctt				973
Pro Glu Leu Thr Ile Leu Ser Pro Thr Ser Glu Asn Asn Lys Lys Leu				
286	291	296	301	
ttc aat gat ctg ttt aaa aat aat gca aac cgt gct gaa aat aca gag				1021
Phe Asn Asp Leu Phe Lys Asn Asn Ala Asn Arg Ala Glu Asn Thr Glu				
302	307	312	317	
aga aag caa aat cag aat tat ttt atg gag gtg atg act gta gaa gga				1069
Arg Lys Gln Asn Gln Asn Tyr Phe Met Glu Val Met Thr Val Glu Gly				
318	323	328	333	
gtc tat gat tac ctg atg tat gta gga cgg gta gtt ttc cag gtt cct				1117
Val Tyr Asp Tyr Leu Met Tyr Val Gly Arg Val Val Phe Gln Val Pro				
334	339	344	349	
gac tgg ctt cat cat ctc tta atg gga act cga atc ctc ttt aaa aac				1165
Asp Trp Leu His His Leu Leu Met Gly Thr Arg Ile Leu Phe Lys Asn				
350	355	360	365	
acc ctg gaa atg tat act gat tac tat ctt cag tgt aaa cta gaa cag				1213
Thr Leu Glu Met Tyr Thr Asp Tyr Tyr Leu Gln Cys Lys Leu Glu Gln				
366	371	376	381	
cta ttt cag gag cac cgt ttg gtc tca ctc ata aca ctt ctc aga gat				1261
Leu Phe Gln Glu His Arg Leu Val Ser Leu Ile Thr Leu Leu Arg Asp				
382	387	392	397	

gct ata ttc tgt gaa aac act gaa cct cgc tct ctc caa gat aag caa	1309
Ala Ile Phe Cys Glu Asn Thr Glu Pro Arg Ser Leu Gln Asp Lys Gln	
398 403 408 413	
aaa gga gca aaa cag act ttt gaa gaa atg atg aat tac att cca gat	1357
Lys Gly Ala Lys Gln Thr Phe Glu Glu Met Met Asn Tyr Ile Pro Asp	
414 419 424 429	
ctg tta gtc aag tgt att ggt gaa gaa acc aag tat gaa agc atc aga	1405
Leu Leu Val Lys Cys Ile Gly Glu Glu Thr Lys Tyr Glu Ser Ile Arg	
430 435 440 445	
ctt ctg ttt gat ggc tta cag caa cca gta ctc aac aag cag ctg act	1453
Leu Leu Phe Asp Gly Leu Gln Gln Pro Val Leu Asn Lys Gln Leu Thr	
446 451 456 461	
tat gtt tta ttg gac att gtg ata cag gaa ctg ttt cca gag ctc aat	1501
Tyr Val Leu Leu Asp Ile Val Ile Gln Glu Leu Phe Pro Glu Leu Asn	
462 467 472 477	
aag gta caa aag gaa gtt acc tct gtg aca tct tgg atg taa acacttg	1550
Lys Val Gln Lys Glu Val Thr Ser Val Thr Ser Trp Met *	
478 483 488	
gatttggtat agaataaccc attgaaattt ctgctgtgctg aggggtggtag aaatttactt	1610
ttttgggtat attcttatat atattatgta catcgctgtc tgaaatttta gttatttttt	1670
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Met Phe Cys His Arg Asp Glu Tyr Phe Arg Gln Leu Leu	
1 5 10	
aga ggg gca gaa tca cca aca cgc aat tca aaa ttg aac aga ggt agc	157
Arg Gly Ala Glu Ser Pro Thr Arg Asn Ser Lys Leu Asn Arg Gly Ser	
14 19 24 29	
cta agt ttg gat gat ttt cgg aac aca cag aaa agg gga gaa tca ttt	205
Leu Ser Leu Asp Asp Phe Arg Asn Thr Gln Lys Arg Gly Glu Ser Phe	
30 35 40 45	

gga atc agc aga ata ggt agc aaa att aaa gga gta ttc aaa agt acc	253
Gly Ile Ser Arg Ile Gly Ser Lys Ile Lys Gly Val Phe Lys Ser Thr	
46 51 56 61	
aca atg gag gga gct atg ttg cct aat tat ggt gta gct gaa ggt gaa	301
Thr Met Glu Gly Ala Met Leu Pro Asn Tyr Gly Val Ala Glu Gly Glu	
62 67 72 77	
gat gat ttt att gaa gaa ggt att gtt gta atg gaa gat gat tct cca	349
Asp Asp Phe Ile Glu Glu Gly Ile Val Val Met Glu Asp Asp Ser Pro	
78 83 88 93	
gtg gag gct gtg agc aca cct aat act ccc cga aac ctt gct gca tgg	397
Val Glu Ala Val Ser Thr Pro Asn Thr Pro Arg Asn Leu Ala Ala Trp	
94 99 104 109	
aaa att agc att cca tat gta gac ttt ttt gag gat ccc tcc tct gaa	445
Lys Ile Ser Ile Pro Tyr Val Asp Phe Phe Glu Asp Pro Ser Ser Glu	
110 115 120 125	
agg aag gag aaa aaa gaa aga att cct gtg ttt tgt att gat gtt gaa	493
Arg Lys Glu Lys Lys Glu Arg Ile Pro Val Phe Cys Ile Asp Val Glu	
126 131 136 141	
aga aat gat aga aga gca gtt gga cac gag cct gaa cat tgg tct gtc	541
Arg Asn Asp Arg Arg Ala Val Gly His Glu Pro Glu His Trp Ser Val	
142 147 152 157	
tat aga aga tat ctt gaa ttc tat gta ctt gaa tca aaa cta aca gaa	589
Tyr Arg Arg Tyr Leu Glu Phe Tyr Val Leu Glu Ser Lys Leu Thr Glu	
158 163 168 173	
ttt cat ggt gca ttt cct gat gcc cag ctt cct tct aag agg atc att	637
Phe His Gly Ala Phe Pro Asp Ala Gln Leu Pro Ser Lys Arg Ile Ile	
174 179 184 189	
ggc ccc aaa aat tat gaa ttc tta aag tca aag agg gaa gag ttc caa	685
Gly Pro Lys Asn Tyr Glu Phe Leu Lys Ser Lys Arg Glu Glu Phe Gln	
190 195 200 205	
gaa tat cta cag aaa ctt ctg cag cat cca gaa ctg agt aat agt caa	733
Glu Tyr Leu Gln Lys Leu Leu Gln His Pro Glu Leu Ser Asn Ser Gln	
206 211 216 221	
ctt ctg gca gac ttt ctt tcc cct aat ggt ggg gaa aca caa ttt ctt	781
Leu Leu Ala Asp Phe Leu Ser Pro Asn Gly Gly Glu Thr Gln Phe Leu	
222 227 232 237	
gat aag ata cta cca gat gta aat ctt ggg aaa att ata aaa tct gtt	829
Asp Lys Ile Leu Pro Asp Val Asn Leu Gly Lys Ile Ile Lys Ser Val	
238 243 248 253	
cct gga aaa cta atg aaa gag aaa ggt cag cat ttg gaa cct ttt atc	877
Pro Gly Lys Leu Met Lys Glu Lys Gly Gln His Leu Glu Pro Phe Ile	
254 259 264 269	

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Met Asn Phe Ile Asn Ser Cys Glu Ser Pro Lys Pro Lys Pro Ser Arg	
270 275 280 285	
cca gaa ctg acc att ctg agc cct act tca gaa aac aac aag aag ctt	973
Pro Glu Leu Thr Ile Leu Ser Pro Thr Ser Glu Asn Asn Lys Lys Leu	
286 291 296 301	
ttc aat gat ctg ttt aaa aat aat gca aac cgt gct gaa aat aca gag	1021
Phe Asn Asp Leu Phe Lys Asn Asn Ala Asn Arg Ala Glu Asn Thr Glu	
302 307 312 317	
aga aag caa aat cag aat tat ttt atg gag gtg atg act gta gaa gga	1069
Arg Lys Gln Asn Gln Asn Tyr Phe Met Glu Val Met Thr Val Glu Gly	
318 323 328 333	
gtc tat gat tac ctg atg tat gta gat gct ata ttc tgt gaa aac act	1117
Val Tyr Asp Tyr Leu Met Tyr Val Asp Ala Ile Phe Cys Glu Asn Thr	
334 339 344 349	
gaa cct cgc tct ctg caa gat aag caa aaa gga gca aaa cag act ttt	1165
Glu Pro Arg Ser Leu Gln Asp Lys Gln Lys Gly Ala Lys Gln Thr Phe	
350 355 360 365	
gaa gaa atg atg aat tac att cca gat ctg tta gtc aag tgt att ggt	1213
Glu Glu Met Met Asn Tyr Ile Pro Asp Leu Leu Val Lys Cys Ile Gly	
366 371 376 381	
gaa gaa acc aag tat gaa agc atc aga ctt ctg ttt gat ggc tta cag	1261
Glu Glu Thr Lys Tyr Glu Ser Ile Arg Leu Leu Phe Asp Gly Leu Gln	
382 387 392 397	
caa cca gta ctg aac aag cag ctg act tat gtt tta ttg gac att gtg	1309
Gln Pro Val Leu Asn Lys Gln Leu Thr Tyr Val Leu Leu Asp Ile Val	
398 403 408 413	
ata cag gaa ctg ttt cca gag ctg aat aag gta caa aag gaa gtt acc	1357
Ile Gln Glu Leu Phe Pro Glu Leu Asn Lys Val Gln Lys Glu Val Thr	
414 419 424 429	
tct gtg aca tct tgg atg taa ac acttgattt ggtatagaat aaccattga	1410
Ser Val Thr Ser Trp Met *	
430 435	
aatttctgct gtgcgagggt ggtagaaatt tacttttttg ggtatattct tatatatatt	1470
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Met Ile Asp Ala Asn Leu	
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aaa ttg ctg cag gaa gct gag caa cgt ctc aaa gcc att gtg gca gag	161
Lys Leu Leu Gln Glu Ala Glu Gln Arg Leu Lys Ala Ile Val Ala Glu	
7 12 17 22	
aag ttt gcc att gcc acc aag gaa ggt gat ttg ccc cag gtg gag cgc	209
Lys Phe Ala Ile Ala Thr Lys Glu Gly Asp Leu Pro Gln Val Glu Arg	
23 28 33 38	
ttc ttc aag atc ttc cca ctg ctg ggt ttg cat gag gag gga tta aga	257
Phe Phe Lys Ile Phe Pro Leu Leu Gly Leu His Glu Glu Gly Leu Arg	
39 44 49 54	
aag ttc tcg gag tac ctt tgc aag cag gtg gcc agt aaa gct gag gag	305
Lys Phe Ser Glu Tyr Leu Cys Lys Gln Val Ala Ser Lys Ala Glu Glu	
55 60 65 70	
aat ctg ctc atg gtg ctg ggg aca gac atg agt gat cgg aga gct gca	353
Asn Leu Leu Met Val Leu Gly Thr Asp Met Ser Asp Arg Arg Ala Ala	
71 76 81 86	
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Val Ile Phe Ala Asp Thr Leu Thr Leu Leu Phe Glu Gly Ile Ala Arg	
87 92 97 102	
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Ile Val Glu Thr His Gln Pro Ile Val Glu Thr Tyr Tyr Gly Pro Gly	
103 108 113 118	
aga ctc tat acc ctg atc aaa tat ctg cag gtg gaa tgt gac aga cag	497
Arg Leu Tyr Thr Leu Ile Lys Tyr Leu Gln Val Glu Cys Asp Arg Gln	
119 124 129 134	
gtg gag aag gtg gta gac aag ttc atc aag caa agg gac tac cac cag	545
Val Glu Lys Val Val Asp Lys Phe Ile Lys Gln Arg Asp Tyr His Gln	
135 140 145 150	
cag ttc cgg cat gtt cag aac aac ctg atg aga aat tct aca aca gaa	593
Gln Phe Arg His Val Gln Asn Asn Leu Met Arg Asn Ser Thr Thr Glu	
151 156 161 166	
aaa atc gaa cca aga gaa ctg gac ccc atc ctg act gag gtc acc ctg	641
Lys Ile Glu Pro Arg Glu Leu Asp Pro Ile Leu Thr Glu Val Thr Leu	
167 172 177 182	
atg aat gcc cgc agt gag cta tac tta cgc ttc ctc aag aag agg att	689

Met	Asn	Ala	Arg	Ser	Glu	Leu	Tyr	Leu	Arg	Phe	Leu	Lys	Lys	Arg	Ile	
183					188					193					198	
agc	tct	gat	ttt	gag	gtg	gga	gac	tcc	atg	gcc	tca	gag	gaa	gta	aag	737
Ser	Ser	Asp	Phe	Glu	Val	Gly	Asp	Ser	Met	Ala	Ser	Glu	Glu	Val	Lys	
199					204					209					214	
caa	gag	cac	cag	aag	tgt	ctg	gac	aaa	ctc	ctc	aat	aac	tgc	ctt	ttg	785
Gln	Glu	His	Gln	Lys	Cys	Leu	Asp	Lys	Leu	Leu	Asn	Asn	Cys	Leu	Leu	
215					220					225					230	
agc	tgt	acc	atg	cag	gag	cta	att	ggc	tta	tat	gtt	acc	atg	gag	gag	833
Ser	Cys	Thr	Met	Gln	Glu	Leu	Ile	Gly	Leu	Tyr	Val	Thr	Met	Glu	Glu	
231					236					241					246	
tac	ttc	atg	agg	gag	act	gtc	aat	aag	gct	gtg	gct	ctg	gac	acc	tat	881
Tyr	Phe	Met	Arg	Glu	Thr	Val	Asn	Lys	Ala	Val	Ala	Leu	Asp	Thr	Tyr	
247					252					257					262	
gag	aag	ggc	cag	ctg	aca	tcc	agc	atg	gtg	gat	gat	gtc	ttc	tac	att	929
Glu	Lys	Gly	Gln	Leu	Thr	Ser	Ser	Met	Val	Asp	Asp	Val	Phe	Tyr	Ile	
263					268					273					278	
gtt	aag	aag	tgc	att	ggg	cgg	gct	ctg	tcc	agc	tcc	agc	att	gac	tgt	977
Val	Lys	Lys	Cys	Ile	Gly	Arg	Ala	Leu	Ser	Ser	Ser	Ser	Ile	Asp	Cys	
279					284					289					294	
ctc	tgt	gcc	atg	atc	aac	ctc	gcc	acc	aca	gag	ctg	gag	tct	gac	ttc	1025
Leu	Cys	Ala	Met	Ile	Asn	Leu	Ala	Thr	Thr	Glu	Leu	Glu	Ser	Asp	Phe	
295					300					305					310	
agg	gat	gtt	ctg	tgt	aat	aag	ctg	cgg	atg	ggc	ttt	cct	gcc	acc	acc	1073
Arg	Asp	Val	Leu	Cys	Asn	Lys	Leu	Arg	Met	Gly	Phe	Pro	Ala	Thr	Thr	
311					316					321					326	
ttc	cag	gac	atc	cag	cgc	ggg	gtg	aca	agt	gcc	gtg	aac	atc	atg	cac	1121
Phe	Gln	Asp	Ile	Gln	Arg	Gly	Val	Thr	Ser	Ala	Val	Asn	Ile	Met	His	
327					332					337					342	
agc	agc	ctc	cag	caa	ggc	aaa	ttt	gac	aca	aaa	ggc	atc	gag	agt	act	1169
Ser	Ser	Leu	Gln	Gln	Gly	Lys	Phe	Asp	Thr	Lys	Gly	Ile	Glu	Ser	Thr	
343					348					353					358	
gac	gag	gcg	aag	atg	tcc	ttc	ctg	gtg	act	ctg	aac	aac	gtg	gaa	gtc	1217
Asp	Glu	Ala	Lys	Met	Ser	Phe	Leu	Val	Thr	Leu	Asn	Asn	Val	Glu	Val	
359					364					369					374	
tgc	agt	gaa	aac	atc	tcc	act	ctg	aag	aag	aca	ctg	gag	agt	gac	tgc	1265
Cys	Ser	Glu	Asn	Ile	Ser	Thr	Leu	Lys	Lys	Thr	Leu	Glu	Ser	Asp	Cys	
375					380					385					390	
acc	aag	ctc	ttc	agc	cag	ggc	att	gga	ggg	gag	cag	gcc	cag	gcc	aag	1313
Thr	Lys	Leu	Phe	Ser	Gln	Gly	Ile	Gly	Gly	Glu	Gln	Ala	Gln	Ala	Lys	
391					396					401					406	
ttt	gac	agc	tgc	ctt	tct	gac	ttg	gcc	gcc	gtg	tcc	aac	aaa	ttc	cga	1361
Phe	Asp	Ser	Cys	Leu	Ser	Asp	Leu	Ala	Ala	Val	Ser	Asn	Lys	Phe	Arg	

407	412	417	422	
gac ctc ttg cag gaa ggg ctg acg gag ctc aac agc aca gcc atc aag				1409
Asp Leu Leu Gln Glu Gly Leu Thr Glu Leu Asn Ser Thr Ala Ile Lys				
423	428	433	438	
cca cag gtg cag cct tgg atc aac agc ttt ttc tcc gtc tcc cac aac				1457
Pro Gln Val Gln Pro Trp Ile Asn Ser Phe Phe Ser Val Ser His Asn				
439	444	449	454	
atc gag gag gaa gaa ttc aat gac tat gag gcc aac gac cct tgg gta				1505
Ile Glu Glu Glu Glu Phe Asn Asp Tyr Glu Ala Asn Asp Pro Trp Val				
455	460	465	470	
caa cag ttc atc ctt aac ctg gag cag caa atg gca gag ttc aag gcc				1553
Gln Gln Phe Ile Leu Asn Leu Glu Gln Gln Met Ala Glu Phe Lys Ala				
471	476	481	486	
agc ctg tcc ccg gtc atc tac gac agc cta acc ggc ctc atg act agc				1601
Ser Leu Ser Pro Val Ile Tyr Asp Ser Leu Thr Gly Leu Met Thr Ser				
487	492	497	502	
ctt gtt gcc gtc gag ttg gag aaa gtg gtg ctg aaa tcc acc ttt aac				1649
Leu Val Ala Val Glu Leu Glu Lys Val Val Leu Lys Ser Thr Phe Asn				
503	508	513	518	
cgg ctg ggt ggt ctg cag ttt gac aag gag ctg agg tcg ctc att gcc				1697
Arg Leu Gly Gly Leu Gln Phe Asp Lys Glu Leu Arg Ser Leu Ile Ala				
519	524	529	534	
tac ctt acc acg gtg acc acc tgg acc atc cga gac aag ttt gcc cgg				1745
Tyr Leu Thr Thr Val Thr Thr Trp Thr Ile Arg Asp Lys Phe Ala Arg				
535	540	545	550	
ctc tcc cag atg gcc acc atc ctc aat ctg gag cgg gtg acc gag atc				1793
Leu Ser Gln Met Ala Thr Ile Leu Asn Leu Glu Arg Val Thr Glu Ile				
551	556	561	566	
ctc gat tac tgg gga ccc aat tcc ggc cca ttg acg tgg cgc ctc acc				1841
Leu Asp Tyr Trp Gly Pro Asn Ser Gly Pro Leu Thr Trp Arg Leu Thr				
567	572	577	582	
cct gct gaa gtg cgc cag gtg ctg gcc ctg cgg ata gac ttc cgc agt				1889
Pro Ala Glu Val Arg Gln Val Leu Ala Leu Arg Ile Asp Phe Arg Ser				
583	588	593	598	
gaa gat atc aag agg ctg cgc ctg tag ctgcc tggatgagca cacctggctc				1941
Glu Asp Ile Lys Arg Leu Arg Leu *				
599	604			
atcacacttg caggcctgtt ccctaagggg cccagccaa ggagctgagc gaggctgtct				2001
ggcttggggg agatctgaca gccagacct ttctacggct ggcagcagag aaacaaagtc				2061
tggaccact ccattgctctg ccctcagacc tggccagggtg atgctctggg ggcagcatct				2121
ccccaccgag agaagcgggc tcctaattgag gtgggaaagc cacggcaggc agcgagcagc				2181

ccaggccagc tttctgcatg gatggtcagt ctcttgcctt caaacactac agcaaacaag 2241
ctaccctgc cagtcctaga caacttgggt acatctgggg acctagcagt taggcttgac 2301
tttgaggaga ggctgtgatg tttatgatcc ctgaataaag ctactccttg gagaaaaaaa 2361
aaaaa 2366

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<212> DNA
<213> Homo sapiens

<220>
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<222> (290)..(1885)

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cgcgggcagc cggcggcgga gccttgctt acagcgcggg gtcctcggcg gcctgggtgg 120
ctactgcccc tgctgctgtc gtaggcgagg acggctgtta gtgctgctgc tgttggttcg 180
tcgcggcggc gaaggaggag gaggaagagg gcgaggcgac aagagaagaa ggaggcaggc 240
gcggcggcag cggcggcgcc ccgagccggc ggaggcgagg ggggggaag atg gcg 295
Met Ala
1
gac gtg ctt agc gtc ctg cga cag tac aac atc cag aag aag gag att 343
Asp Val Leu Ser Val Leu Arg Gln Tyr Asn Ile Gln Lys Lys Glu Ile
3 8 13 18
gtg gtg aag gga gac gaa gtg atc ttc ggg gag ttc tcc tgg ccc aag 391
Val Val Lys Gly Asp Glu Val Ile Phe Gly Glu Phe Ser Trp Pro Lys
19 24 29 34
aat gtg aag acc aac tat gtt gtt tgg ggg act gga aag gaa ggc caa 439
Asn Val Lys Thr Asn Tyr Val Val Trp Gly Thr Gly Lys Glu Gly Gln
35 40 45 50
ccc aga gag tac tac aca ttg gat tcc att tta ttt cta ctt aat aac 487
Pro Arg Glu Tyr Tyr Thr Leu Asp Ser Ile Leu Phe Leu Leu Asn Asn
51 56 61 66
gtg cac ctt tct cat cct gtt tat gtc cga cgt gca gct act gaa aat 535
Val His Leu Ser His Pro Val Tyr Val Arg Arg Ala Ala Thr Glu Asn
67 72 77 82
att cct gtg gtt aga aga cct gat cga aaa gat cta ctt gga tat ctc 583
Ile Pro Val Val Arg Arg Pro Asp Arg Lys Asp Leu Leu Gly Tyr Leu
83 88 93 98

aat ggt gaa gcg tca aca tcg gca agt ata gac aga agc gct ccc tta	631
Asn Gly Glu Ala Ser Thr Ser Ala Ser Ile Asp Arg Ser Ala Pro Leu	
99 104 109 114	
gaa ata ggt ctt cag cga tct act caa gtc aaa cga gct gca gat gaa	679
Glu Ile Gly Leu Gln Arg Ser Thr Gln Val Lys Arg Ala Ala Asp Glu	
115 120 125 130	
gtt tta gca gaa gca aag aaa cca cga att gag gat gaa gag tgt gtg	727
Val Leu Ala Glu Ala Lys Lys Pro Arg Ile Glu Asp Glu Glu Cys Val	
131 136 141 146	
cgc ctt gat aaa gag aga ttg gct gcc cgt ttg gag ggt cac aaa gaa	775
Arg Leu Asp Lys Glu Arg Leu Ala Ala Arg Leu Glu Gly His Lys Glu	
147 152 157 162	
ggg att gta cag act gaa cag att agg tct ttg tct gaa gct atg tca	823
Gly Ile Val Gln Thr Glu Gln Ile Arg Ser Leu Ser Glu Ala Met Ser	
163 168 173 178	
gtg gaa aaa att gct gca atc aaa gcc aaa att atg gct aag aaa aga	871
Val Glu Lys Ile Ala Ala Ile Lys Ala Lys Ile Met Ala Lys Lys Arg	
179 184 189 194	
tct act atc aag act gat cta gat gat gac ata act gcc ctt aaa cag	919
Ser Thr Ile Lys Thr Asp Leu Asp Asp Asp Ile Thr Ala Leu Lys Gln	
195 200 205 210	
agg agt ttt gtg gat gct gag gta gat gtg acc cga gat att gtc agc	967
Arg Ser Phe Val Asp Ala Glu Val Asp Val Thr Arg Asp Ile Val Ser	
211 216 221 226	
aga gag aga gta tgg agg aca cga aca act atc tta caa agc aca gga	1015
Arg Glu Arg Val Trp Arg Thr Arg Thr Thr Ile Leu Gln Ser Thr Gly	
227 232 237 242	
aag aat ttt tcc aag aac att ttt gca att ctt caa tct gta aaa gcc	1063
Lys Asn Phe Ser Lys Asn Ile Phe Ala Ile Leu Gln Ser Val Lys Ala	
243 248 253 258	
aga gaa gaa ggg cgt gca cct gaa cag cga cct gcc cca aat gca gca	1111
Arg Glu Glu Gly Arg Ala Pro Glu Gln Arg Pro Ala Pro Asn Ala Ala	
259 264 269 274	
cct gtg gat ccc act ttg cgc acc aaa cag cct atc cca gct gcc tat	1159
Pro Val Asp Pro Thr Leu Arg Thr Lys Gln Pro Ile Pro Ala Ala Tyr	
275 280 285 290	
aac aga tac gat cag gaa aga ttc aaa gga aaa gaa gaa acg gaa ggc	1207
Asn Arg Tyr Asp Gln Glu Arg Phe Lys Gly Lys Glu Glu Thr Glu Gly	
291 296 301 306	
ttc aaa att gac act atg gga acc tac cat ggt atg aca ctg aaa tct	1255
Phe Lys Ile Asp Thr Met Gly Thr Tyr His Gly Met Thr Leu Lys Ser	
307 312 317 322	

gctttgtgct tcaaggagat gatacctgtc atccatataa gcaaactttt tggcttacaa 2055
ctattttttt aatattagcc ttctagtctg taatggaaat tgtatatatt gatagaagtt 2115
ttttctccat tgggttaaatt agcattactt aaaatttggt tcttttagaaa ataaatgcag 2175
gttataaatg tgtgtatatt tagagattat aaggctctct gagccatctt ctgatttttc 2235
attgctctat aattcttttt actgaaaata ctatgttatg aatgggatta aatttttagtc 2295
tctggaacat ccaaaaccaa gcaaagggat gtgactattt tgaatgaatc agaatgtcaa 2355
cttgatgta cactatatct acacttactc attatttaaa aagaataatg aaaaatctag 2415
atcaattctt caatttgatt gaactgttca gccttttcaa gatttcttta ttacaaatg 2475
attacattta aatgaatgta cattcttctc actgactttg gtgattttga aacctagaat 2535
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ccacaaaaaa aaaaaa 2611

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<213> Homo sapiens
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<222> (58)..(1062)

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atg acg cgc tca ctg ttc aag gga aac ttt tgg agt gca gac atc ctc 105
Met Thr Arg Ser Leu Phe Lys Gly Asn Phe Trp Ser Ala Asp Ile Leu
1 5 10 15
agc acc atc ggc tat gac aac att atc caa cat ctg aac aat ggc cgc 153
Ser Thr Ile Gly Tyr Asp Asn Ile Ile Gln His Leu Asn Asn Gly Arg
17 22 27 32
aag aac tgc aaa gag ttt gaa gac ttt cta aaa gaa agg gca gca att 201
Lys Asn Cys Lys Glu Phe Glu Asp Phe Leu Lys Glu Arg Ala Ala Ile
33 38 43 48
gaa gag agg tat ggc aaa gat ctg ctc aac ctc tct agg aag aag ccg 249
Glu Glu Arg Tyr Gly Lys Asp Leu Leu Asn Leu Ser Arg Lys Lys Pro
49 54 59 64
tgt gga cag tct gaa atc aac acc ctg aag cgg gcc ctt gaa gtc ttc 297
Cys Gly Gln Ser Glu Ile Asn Thr Leu Lys Arg Ala Leu Glu Val Phe
65 70 75 80

aag cag caa gta gac aat gtg gca caa tgt cac att cag ctt gca cag	345
Lys Gln Gln Val Asp Asn Val Ala Gln Cys His Ile Gln Leu Ala Gln	
81 86 91 96	
agt tta aga gaa gag gcc agg aag atg gaa gaa ttc agg gaa aag caa	393
Ser Leu Arg Glu Glu Ala Arg Lys Met Glu Glu Phe Arg Glu Lys Gln	
97 102 107 112	
aaa cta caa cga aaa aag aca gag ctc ata atg gat gct atc cat aaa	441
Lys Leu Gln Arg Lys Lys Thr Glu Leu Ile Met Asp Ala Ile His Lys	
113 118 123 128	
caa aag agc tta caa ttc aag aaa acc atg gat gca aag aag aac tat	489
Gln Lys Ser Leu Gln Phe Lys Lys Thr Met Asp Ala Lys Lys Asn Tyr	
129 134 139 144	
gag cag aaa tgc cgg gac aaa gat gag gca gaa cag gcc gtc agc cgg	537
Glu Gln Lys Cys Arg Asp Lys Asp Glu Ala Glu Gln Ala Val Ser Arg	
145 150 155 160	
agt gcc aac ctg gtg aac ccg aag caa caa gaa aag ctt ttt gtg aaa	585
Ser Ala Asn Leu Val Asn Pro Lys Gln Gln Glu Lys Leu Phe Val Lys	
161 166 171 176	
ctg gca act tca aag acc gca gta gag gac tca gac aaa gca tac atg	633
Leu Ala Thr Ser Lys Thr Ala Val Glu Asp Ser Asp Lys Ala Tyr Met	
177 182 187 192	
ctg cac atc ggc acc ctg gat aag gtc cga gaa gag tgg cag agt gag	681
Leu His Ile Gly Thr Leu Asp Lys Val Arg Glu Glu Trp Gln Ser Glu	
193 198 203 208	
cac atc aag gcc tgc gag gca ttt gag gct caa gaa tgt gaa cga ata	729
His Ile Lys Ala Cys Glu Ala Phe Glu Ala Gln Glu Cys Glu Arg Ile	
209 214 219 224	
aac ttc ttc cgg aat gca ttg tgg tta cat gtg aat cag ctg tca caa	777
Asn Phe Phe Arg Asn Ala Leu Trp Leu His Val Asn Gln Leu Ser Gln	
225 230 235 240	
caa tgt gtc acc agt gat gaa atg tac gaa caa gtc cga aag agt tta	825
Gln Cys Val Thr Ser Asp Glu Met Tyr Glu Gln Val Arg Lys Ser Leu	
241 246 251 256	
gaa atg tgc agc att cag agg gac att gaa tac ttt gtg aat caa cgc	873
Glu Met Cys Ser Ile Gln Arg Asp Ile Glu Tyr Phe Val Asn Gln Arg	
257 262 267 272	
aaa act gga cag att cca cca gca ccc atc atg tat gag aat ttc tac	921
Lys Thr Gly Gln Ile Pro Pro Ala Pro Ile Met Tyr Glu Asn Phe Tyr	
273 278 283 288	
tcc tcc cag aag aat gca gtc cca gca gga aag gct aca ggg cct aac	969
Ser Ser Gln Lys Asn Ala Val Pro Ala Gly Lys Ala Thr Gly Pro Asn	
289 294 299 304	
ttg gca agg aga gga ccc ctc cca att cct aaa agc tca cca gat gat	1017

Leu Ala Arg Arg Gly Pro Leu Pro Ile Pro Lys Ser Ser Pro Asp Asp
 305 310 315 320
 ccc aat tac tct ttg gtt gat gac tac agt ttg ctc tat cag taa aat 1065
 Pro Asn Tyr Ser Leu Val Asp Asp Tyr Ser Leu Leu Tyr Gln *
 321 326 331
 caatgaaacc agagctttttt ccggctagtg cttctgtgat atggaaaggg caccagagc 1125
 agcaggacct atagccacgt tatgtcagca atgaagactt tgaagtgaac ccttgctata 1185
 attttttaga gatttaaaat ttatggtaga catttaggac aacataagca agtagagttc 1245
 tgcagttttt tgaagtttac aaattgcccc attctgaaga attattcttt ccaggttact 1305
 caggttatga atgaattagg ttttcaacat gggaagcatg aaatccactt ctggatttgg 1365
 agcatccact tgaggagcag aggtggcagc agaggattct gagccaccaa ctgcagtagt 1425
 ggctcctttg gctttgggca gcctggctgt ggagtttcca cggcgacaca cagcctcagt 1485
 ggtgcaagat ttaaaattac cttccttttt ggctggaaga cttagaagcc gcctgatcat 1545
 actttctcat tttacagatg aggaaataaa gcctacaagt gtgaaattaa aaaaaaaaaa 1605
 a 1606

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 <212> DNA
 <213> Homo sapiens

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 <222> (117)..(830)

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 atg tcg gac agt gat cta ggt gag gac gaa ggc ctc ctc tcc ctg gcg 164
 Met Ser Asp Ser Asp Leu Gly Glu Asp Glu Gly Leu Leu Ser Leu Ala
 1 5 10 15
 ggc aaa agg aag cgc agg ggg aac ctg ccc aag gag tcg gtg aag atc 212
 Gly Lys Arg Lys Arg Arg Gly Asn Leu Pro Lys Glu Ser Val Lys Ile
 17 22 27 32
 ctc cgg gac tgg ctg tac ttg cac cgc tac aac gcc tac ccc tca gag 260
 Leu Arg Asp Trp Leu Tyr Leu His Arg Tyr Asn Ala Tyr Pro Ser Glu
 33 38 43 48
 /
 cag gag aag ctg agc ctt tct gga cag acc aac ctg tca gtg ctg caa 308
 Gln Glu Lys Leu Ser Leu Ser Gly Gln Thr Asn Leu Ser Val Leu Gln

49	54	59	64			
ata tgt aac tgg ttc	atc aat gcc cgg cgg	cgg ctt ctc cca gac atg		356		
Ile Cys Asn Trp Phe	Ile Asn Ala Arg Arg	Leu Leu Pro Asp Met				
65	70	75	80			
ctt cgg aag gat ggc	aaa gac cct aat cag	ttt acc att tcc cgc cgc		404		
Leu Arg Lys Asp Gly	Lys Asp Pro Asn Gln	Phe Thr Ile Ser Arg Arg				
81	86	91	96			
ggg ggt aag gcc tca	gat gtg gcc ctc ccc	cgt ggc agc agc ccc tca		452		
Gly Gly Lys Ala Ser	Asp Val Ala Leu Pro	Arg Gly Ser Ser Pro Ser				
97	102	107	112			
gtg ctg gct gtg tct	gtc cca gcc ccc acc	aat gtg ctc tcc ctg tct		500		
Val Leu Ala Val Ser	Val Pro Ala Pro Thr	Asn Val Leu Ser Leu Ser				
113	118	123	128			
gtg tgc tcc atg ccg	ctt cac tca ggc cag	ggg gaa aag cca gca gcc		548		
Val Cys Ser Met Pro	Leu His Ser Gly Gln	Gly Glu Lys Pro Ala Ala				
129	134	139	144			
cct ttc cca cgt ggg	gag ctg gag tct ccc	aag ccc ctg gtg acc cct		596		
Pro Phe Pro Arg Gly	Glu Leu Glu Ser Pro	Lys Pro Leu Val Thr Pro				
145	150	155	160			
ggt agc aca ctt act	ctg ctg acc agg gct	gag gct gga agc ccc aca		644		
Gly Ser Thr Leu Thr	Leu Leu Thr Arg Ala	Glu Ala Gly Ser Pro Thr				
161	166	171	176			
ggt gga ctc ttc aac	acg cca cca ccc aca	ccc cca gag cag gac aaa		692		
Gly Gly Leu Phe Asn	Thr Pro Pro Pro Thr	Pro Pro Glu Gln Asp Lys				
177	182	187	192			
gag gac ttc agc agc	ttc cag ctg ctg gtg	gag gtg gcg cta cag agg		740		
Glu Asp Phe Ser Ser	Phe Gln Leu Leu Val	Glu Val Ala Leu Gln Arg				
193	198	203	208			
gct gct gag atg gag	ctt cag aag cag cag	gac cca tca ctc cca tta		788		
Ala Ala Glu Met Glu	Leu Gln Lys Gln Gln	Asp Pro Ser Leu Pro Leu				
209	214	219	224			
ctg cac act ccc atc	cct tta gtc tct gaa	aat ccc cag tag gcactctg		837		
Leu His Thr Pro Ile	Pro Leu Val Ser Glu	Asn Pro Gln *				
225	230	235				
ccaagaagg	tgctgaagg	tccagccag	tgctcctgggt	ttccgttttg	gttccctttc	897
atacagagg	ttttctatg	atcactgcc	aacattggga	tcactctctc	tgtccagagg	957
tcttcaacag	gaagatgcc	gctggcacca	ctgcactgtg	atgggggccc	tctcctctgc	1017
tgactctgcc	gtttctccag	gcctccgctc	agtgatgaga	ccaagagatc	ggagacaagc	1077
atggtgctgc	tgcttctgct	gcttctccag	aaaatccctg	ggacaccttt	gttccagcct	1137
ggtttcctgg	gctgggctca	ggaaagctgc	caaattcagt	cctatgttgg	gtccaagctg	1197

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ccccctgtgct gtttctgtca agccagggtgt ggacattcca agttcatatg cgtgaacaaa 1257
agaaaagagg aaccagtggt atgtaacaga accgactcca gttgaatggt tagatttttg 1317
ctaaaactggt ttctttttcc cttttttgct gtggtttgca ttcacggcag tagttagccc 1377
aggtgtggggg aacgagagtg cactgcatga tagcgttctg gtgagctggg aaggaccac 1437
cactgccact gaggattggt ttggaagaaa ggaatatttt tatcttgggg accagctaag 1497
tctctgcagt agtgtgaaat tccaaatggt tgttttatca ttggtttggg ttaccaaaaa 1557
aaaggcaggg aaaaaaaaaa aa 1579

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<212> DNA
<213> Homo sapiens

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<222> (350)..(1312)

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aaaggattta cttgggggat ttagctcctg ccatcttttg attgccattt tctcatggaa 180
gatatagctt cttagctggg ccggaagcag atgccggcgg cgcggcgtgg cagggttgtg 240
gttccgggtc gggccgcgcc gcagccagct ctcggctcgc agccgcagcg ccccgccccc 300
gcgctccgga cctggcaggc ggcggctgca ggcagggtcc agggggccac atg gct 355
Met Ala
1

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gag ggg gac gca ggg agc gac cag agg cag aat gag gaa att gaa gca 403
Glu Gly Asp Ala Gly Ser Asp Gln Arg Gln Asn Glu Glu Ile Glu Ala
3 8 13 18

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atg gca gcc att tat ggc gag gag tgg tgt gtc att gat gac tgt gcc 451
Met Ala Ala Ile Tyr Gly Glu Glu Trp Cys Val Ile Asp Asp Cys Ala
19 24 29 34

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aaa ata ttt tgt att aga att agc gac gat ata gat gac ccc aaa tgg 499
Lys Ile Phe Cys Ile Arg Ile Ser Asp Asp Ile Asp Asp Pro Lys Trp
35 40 45 50

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aca ctt tgc ttg cag gtg atg ctg ccg aat gaa tac cca ggt aca gct 547
Thr Leu Cys Leu Gln Val Met Leu Pro Asn Glu Tyr Pro Gly Thr Ala
51 56 61 66

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cca cct atc tac cag ttg aat gct cct tgg ctt aaa ggg caa gaa cgt	595
Pro Pro Ile Tyr Gln Leu Asn Ala Pro Trp Leu Lys Gly Gln Glu Arg	
67 72 77 82	
gcg gat tta tca aat agc ctt gag gaa ata tat att cag aat atc ggt	643
Ala Asp Leu Ser Asn Ser Leu Glu Glu Ile Tyr Ile Gln Asn Ile Gly	
83 88 93 98	
gaa agt att ctt tac ctg tgg gtg gag aaa ata aga gat gtt ctt ata	691
Glu Ser Ile Leu Tyr Leu Trp Val Glu Lys Ile Arg Asp Val Leu Ile	
99 104 109 114	
caa aaa tct cag atg aca gaa cca ggc cca gat gta aag aag aaa act	739
Gln Lys Ser Gln Met Thr Glu Pro Gly Pro Asp Val Lys Lys Lys Thr	
115 120 125 130	
gaa gag gaa gat gtt gaa tgt gaa gat gat ctc att tta gca tgt cag	787
Glu Glu Glu Asp Val Glu Cys Glu Asp Asp Leu Ile Leu Ala Cys Gln	
131 136 141 146	
ccg gaa agt tcg gtt aaa gca ttg gat ttt gat atc agt gaa act cgg	835
Pro Glu Ser Ser Val Lys Ala Leu Asp Phe Asp Ile Ser Glu Thr Arg	
147 152 157 162	
aca gaa gta gaa gta gaa gaa tta cct ccg att gat cat ggc att cct	883
Thr Glu Val Glu Val Glu Glu Leu Pro Pro Ile Asp His Gly Ile Pro	
163 168 173 178	
att aca gac cga aga agt act ttt cag gca cac ttg gct cca gtg gtt	931
Ile Thr Asp Arg Arg Ser Thr Phe Gln Ala His Leu Ala Pro Val Val	
179 184 189 194	
tgt ccc aaa cag gtg aaa atg gtt ctt tcc aaa ttg tat gag aat aag	979
Cys Pro Lys Gln Val Lys Met Val Leu Ser Lys Leu Tyr Glu Asn Lys	
195 200 205 210	
aaa ata gct agt gcc acc cac aac atc tat gcc tac aga ata tat tgt	1027
Lys Ile Ala Ser Ala Thr His Asn Ile Tyr Ala Tyr Arg Ile Tyr Cys	
211 216 221 226	
gag gat aaa cag acc ttc tta cag gat tgt gag gat gat ggg gaa aca	1075
Glu Asp Lys Gln Thr Phe Leu Gln Asp Cys Glu Asp Asp Gly Glu Thr	
227 232 237 242	
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cca gat cgc ttt aaa cat atc aac aac tgt gcc aga aac ata cta gtg	1219
Pro Asp Arg Phe Lys His Ile Asn Asn Cys Ala Arg Asn Ile Leu Val	
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gcgctccgga cctggcaggc ggcggctgca gggcaggtcc agggggccac	355
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Glu Gly Asp Ala Gly Ser Asp Gln Arg Gln Asn Glu Glu Ile Glu Ala	
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Met Ala Ala Ile Tyr Gly Glu Glu Trp Cys Val Ile Asp Asp Cys Ala	
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Lys Ile Phe Cys Ile Arg Ile Ser Asp Asp Ile Asp Asp Pro Lys Trp	
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aca ctt tgc ttg cag gtg atg ctg ccg aat gaa tac cca gtg gag aaa	547
Thr Leu Cys Leu Gln Val Met Leu Pro Asn Glu Tyr Pro Val Glu Lys	
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Ile Arg Asp Val Leu Ile Gln Lys Ser Gln Met Thr Glu Pro Gly Pro	
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gat gta aag aag aaa act gaa gag gaa gat gtt gaa tgt gaa gat gat	643
Asp Val Lys Lys Lys Thr Glu Glu Glu Asp Val Glu Cys Glu Asp Asp	
83 88 93 98	
ctc att tta gca tgt cag ccg gaa agt tcg gtt aaa gca ttg gat ttt	691
Leu Ile Leu Ala Cys Gln Pro Glu Ser Ser Val Lys Ala Leu Asp Phe	
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Asp Ile Ser Glu Thr Arg Thr Glu Val Glu Val Glu Glu Leu Pro Pro	
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Ile Asp His Gly Ile Pro Ile Thr Asp Arg Arg Ser Thr Phe Gln Ala	
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His Leu Ala Pro Val Val Cys Pro Lys Gln Val Lys Met Val Leu Ser	
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Lys Leu Tyr Glu Asn Lys Lys Ile Ala Ser Ala Thr His Asn Ile Tyr	
163 168 173 178	
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Ala Tyr Arg Ile Tyr Cys Glu Asp Lys Gln Thr Phe Leu Gln Asp Cys	
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Met Ser Phe Glu Trp Pro Trp Gln Tyr Arg Phe Pro Pro Phe Phe Thr
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cga aag ctt cct gtg gag tgc atc cag att gta tta gag gaa ctg agg      417
Arg Lys Leu Pro Val Glu Ser Ile Gln Ile Val Leu Glu Glu Leu Arg
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Val Ser Arg Ser Gly Gln Asn Asn Ser Val Phe Thr Leu Tyr Glu Leu
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Thr Asn Gly Glu Asp Thr Glu Asp Glu Glu Phe His Gly Leu Asp Glu
 131              136              141              146

gcc act cta ctg ccg gct ctg cag gcc cta cag cag gag cac aag gcc      657
Ala Thr Leu Leu Arg Ala Leu Gln Ala Leu Gln Gln Glu His Lys Ala
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 Met Ala Ala Leu Thr Thr

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 Gly Glu Ile Arg Arg Met Met Glu Val Ala Ala Ala Asp Val Lys Gln
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Leu Gly Gly Ser Val Glu Leu Val Asp Ile Gly Lys Gln Lys Leu Pro	
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Asp Gly Ser Glu Ile Pro Leu Pro Pro Ile Leu Leu Gly Arg Leu Gly	
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Ser Asp Pro Gln Lys Lys Thr Val Cys Ile Tyr Gly His Leu Asp Val	
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Gln Pro Ala Ala Leu Glu Asp Gly Trp Asp Ser Glu Pro Phe Thr Leu	
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Val Glu Arg Asp Gly Lys Leu Tyr Gly Arg Gly Ser Thr Asp Asp Lys	
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Gly Pro Val Ala Gly Trp Ile Asn Ala Leu Glu Ala Tyr Gln Lys Thr	
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Glu Ser Gly Ser Glu Gly Leu Asp Glu Leu Ile Phe Ala Arg Lys Asp	
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Tyr Phe Phe Ile Glu Val Glu Cys Ser Asn Lys Asp Leu His Ser Gly	
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Ile Leu Leu His Ser	His Lys Lys Asp Ile	Leu Met His Arg Trp Arg	
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Tyr Pro Ser Leu Ser	Leu His Gly Ile Glu	Gly Ala Phe Ser Gly Ser	
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ggg gcc aag acc gtg	att ccc agg aag gtg	gtt ggc aag ttc tcc atc	1243
Gly Ala Lys Thr Val	Ile Pro Arg Lys Val	Val Gly Lys Phe Ser Ile	
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agg ctc gtg ccg aac	atg act cct gaa gtc	gtc ggc gag cag gtc aca	1291
Arg Leu Val Pro Asn	Met Thr Pro Glu Val	Gly Glu Gln Val Thr	
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His Pro His Tyr Leu	Ala Gly Arg Arg Ala	Met Lys Thr Val Phe Gly	
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gtt gag cca gac ttg	acc agg gaa ggc ggc	agt att ccc gtg acc ttg	1483
Val Glu Pro Asp Leu	Thr Arg Glu Gly Gly	Ser Ile Pro Val Thr Leu	
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acc ttt cag gag gcc	acg ggc aag aac gtc	atg ctg ctg cct gtg ggg	1531
Thr Phe Gln Glu Ala	Thr Gly Lys Asn Val	Met Leu Leu Pro Val Gly	
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aac tac ata gag gga	acc aag atg ctg gcc	gcg tac ctg tat gag gtc	1627
Asn Tyr Ile Glu Gly	Thr Lys Met Leu Ala	Ala Tyr Leu Tyr Glu Val	
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tcc cag ctg aag gac	tag gcc aag ccctctgtgt	gccatctcca atgagaagga	1681
Ser Gln Leu Lys Asp	*		
471	476		
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 Leu Leu Pro Asp Thr Glu Arg Ile Arg Arg Ala Thr Glu Gln Leu Gln
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126 131 136 141	
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Cys Glu Ala Leu Glu Ala Leu Asp Glu Leu Leu Glu Ser Glu Val Pro	
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Val Ile Thr Pro Tyr Leu Ser Glu Val Leu Thr Phe Cys Leu Glu Val	
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Ala Arg Asn Val Ala Leu Gly Asn Ala Ile Arg Ile Arg Ile Leu Cys	
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462					467					472					477	
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Leu Arg Glu Phe Leu Leu Thr Gly Arg Glu Thr Phe Ser Leu Cys Arg				
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Tyr Arg Ala Trp Arg His Trp Gly Cys Trp Thr Gln Gln Val Gly Ser				
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tcgagacgtg gtggagttgg ctggggtga acttctttcg gggggctgcc tgtccttctt				180
tttgagaag atgaatccgg cctcggcgcc cctcgcctc ccgccgctg ggcagcaagt				240
gatccacgtc acgcaggacc tagacacaga cctcgaagcc ctcttcaact ctgtcatgaa				300
tccgaagcct agctcgtggc ggaagaagaa tctgcccag tctttcttta aggagcctga				360
ttcgggctcg cactctgcc agtcagcac cgactcgtcg gcggccacc ggggcctcga				420
ctggctgggg tgcccagcat gtccgctcgc actcgcgcca gtccagcacc gactcgtcgg				480
gcggccacc ggggcctcga ctggctgggg gtgccagca tgtccgctcg cactcgtcgc				540

ccgcgtccct gcagctgggc accggcgcggtgtgctgcggg tagccccgcg cagcagcacg 600

cgcacctccg ccagcagtcc tacgacgtga ccgacgagct gccactgccc ccgggctggg 660

ag atg acc ttc acg gcc act ggc cag agg tac ttc ctc aat cac ata 707
Met Thr Phe Thr Ala Thr Gly Gln Arg Tyr Phe Leu Asn His Ile
1 5 10

gaa aaa atc acc aca tgg caa gac cct agg aag gcg atg aat cag cct 755
Glu Lys Ile Thr Thr Trp Gln Asp Pro Arg Lys Ala Met Asn Gln Pro
16 21 26 31

ctg aat cat atg aac ctc cac cct gcc gtc agt tcc aca cca gtg cct 803
Leu Asn His Met Asn Leu His Pro Ala Val Ser Ser Thr Pro Val Pro
32 37 42 47

cag agg tcc atg gca gta tcc cag cca aat ctc gtg atg aat cac caa 851
Gln Arg Ser Met Ala Val Ser Gln Pro Asn Leu Val Met Asn His Gln
48 53 58 63

cac cag cag cag atg gcc ccc agt acc ctg agc cag cag aac cac ccc 899
His Gln Gln Gln Met Ala Pro Ser Thr Leu Ser Gln Gln Asn His Pro
64 69 74 79

act cag aac cca ccc gca ggg ctc atg agt atg ccc aat gcg ctg acc 947
Thr Gln Asn Pro Pro Ala Gly Leu Met Ser Met Pro Asn Ala Leu Thr
80 85 90 95

act cag cag cag cag cag cag cag aaa ctg cgg ctt cag aga atc cag atg 995
Thr Gln Gln Gln Gln Gln Gln Lys Leu Arg Leu Gln Arg Ile Gln Met
96 101 106 111

gag aga gaa agg att cga atg cgc caa gag gag ctc atg agg cag gaa 1043
Glu Arg Glu Arg Ile Arg Met Arg Gln Glu Glu Leu Met Arg Gln Glu
112 117 122 127

gct gcc ctc tgt cga cag ctc ccc atg gaa gct gag act ctt gcc cca 1091
Ala Ala Leu Cys Arg Gln Leu Pro Met Glu Ala Glu Thr Leu Ala Pro
128 133 138 143

gtt cag gct gct gtc aac cca ccc acg atg acc cca gac atg aga tcc 1139
Val Gln Ala Ala Val Asn Pro Pro Thr Met Thr Pro Asp Met Arg Ser
144 149 154 159

atc act aat aat agc tca gat cct ttc ctc aat gga ggg cca tat cat 1187
Ile Thr Asn Asn Ser Ser Asp Pro Phe Leu Asn Gly Gly Pro Tyr His
160 165 170 175

tcg agg gag cag agc act gac agt ggc ctg ggg tta ggg tgc tac agt 1235
Ser Arg Glu Gln Ser Thr Asp Ser Gly Leu Gly Leu Gly Cys Tyr Ser
176 181 186 191

gtc ccc aca act ccg gag gac ttc ctc agc aat gtg gat gag atg gat 1283
Val Pro Thr Thr Pro Glu Asp Phe Leu Ser Asn Val Asp Glu Met Asp
192 197 202 207

aca gga gaa aac gca gga caa aca ccc atg aac atc aat ccc caa cag 1331

caggacaaca tagatttcaa cctgatagca caccacacac agtgagctgt tgctttttaa	2795
attctgaagc cttgtcaggt ttgcttccta gatttcaagt gtttaaaata attctatcta	2855
tgaaactgaa ggatgaagca gatctctgac tgacatgtaa aaaaaaatgc cctttgaggg	2915
tgtatggtgg agataaatgt ttctgaattc agtaaaattg attcctaagt atattatcct	2975
aatcctgttt gctacagttg gtataaaaag gcatgaaata tgtattcaat acctcttatg	3035
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gagcgtacag gcagacaaga gcgtagcctg ctgttgcttc catcactatg aaatgactta	3635
ttttacctga aggacctatg gtttatgttc ctctaattcc tttcactctc cctaagccct	3695
ctgagagaga tgaagataga tgattttatt gctactaaat tgaagggagc actatttctt	3755
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gcgggctctt cgccctttgt gtcctccttc tttcactaac ttctggactt tccagctctt	180

ccgaagttcg ttcttgcgca aagcccaaag gctggaaaac cgtccacgat gaccagcatg	240
actcagtctc tgcgggaggt gataaaggcc atgaccaagg ctcgcaattt tgagagagtt	300
ttgagagagt tttgggaaaag attactcttg tctctgctgc tcctgggaaa gtgatttgtg	360
aa atg aaa gta gaa gaa gag cat acc aat gca ata ggc act ctc cac	407
Met Lys Val Glu Glu Glu His Thr Asn Ala Ile Gly Thr Leu His	
1 5 10	
ggc ggt ttg aca gcc acg tta gta gat aac ata tca aca atg gct ctg	455
Gly Gly Leu Thr Ala Thr Leu Val Asp Asn Ile Ser Thr Met Ala Leu	
16 21 26 31	
cta tgc acg gaa agg gga gca ccc gga gtc agt gtc gat atg aac ata	503
Leu Cys Thr Glu Arg Gly Ala Pro Gly Val Ser Val Asp Met Asn Ile	
32 37 42 47	
acg tac atg tca cct gca aaa tta gga gaa gat ata gtg att aca gca	551
Thr Tyr Met Ser Pro Ala Lys Leu Gly Glu Asp Ile Val Ile Thr Ala	
48 53 58 63	
cat gtt ctg aag caa gga aaa aca ctt gca ttt acc tct gtg gat ctg	599
His Val Leu Lys Gln Gly Lys Thr Leu Ala Phe Thr Ser Val Asp Leu	
64 69 74 79	
acc aac aag gcc aca gga aaa tta ata gca caa gga aga cac aca aaa	647
Thr Asn Lys Ala Thr Gly Lys Leu Ile Ala Gln Gly Arg His Thr Lys	
80 85 90 95	
cac ctg gga aac tga gagaacagca gaatgaccta aagaaaccca acaatgaata	702
His Leu Gly Asn *	
96	
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aaaaaaaaa	771

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ttggaccttc gagcctagct gctcgcacag gactcggcca cctgcccttc ctgcaccgac	180

tggccagctc aagaggtttg gat	atg gac ctt ctt caa ttc ctg gcc ttc	230
	Met Asp Leu Leu Gln Phe Leu Ala Phe	
	1 5	
ctc ttt gtc ctg ctt ttg tct ggg atg gga gcc aca ggc acc ttg agg	278	
Leu Phe Val Leu Leu Ser Gly Met Gly Ala Thr Gly Thr Leu Arg		
10 15 20 25		
acc tcc ctg gac cca agc ctg gag atc tac aag aag atg ttt gag gtg	326	
Thr Ser Leu Asp Pro Ser Leu Glu Ile Tyr Lys Lys Met Phe Glu Val		
26 31 36 41		
aag cgg cgg gag cag ctg ttg gca ctg aag aac ctg gca cag ctg aac	374	
Lys Arg Arg Glu Gln Leu Leu Ala Leu Lys Asn Leu Ala Gln Leu Asn		
42 47 52 57		
gac atc cac cag cag tac aag atc ctt gat gtc atg ctc aag ggg ctc	422	
Asp Ile His Gln Gln Tyr Lys Ile Leu Asp Val Met Leu Lys Gly Leu		
58 63 68 73		
ttt aag gtg ctg gag gac tcc cgg aca gtg ctc acc gct gct gat gtg	470	
Phe Lys Val Leu Glu Asp Ser Arg Thr Val Leu Thr Ala Ala Asp Val		
74 79 84 89		
ctc cca gat ggg ccc ttc ccc cag gac gag aag ctg aag gat gct ttc	518	
Leu Pro Asp Gly Pro Phe Pro Gln Asp Glu Lys Leu Lys Asp Ala Phe		
90 95 100 105		
tcc cac gtg gtg gag aac acg gcc ttc ttc ggc gat gtg gtg ctg cgc	566	
Ser His Val Val Glu Asn Thr Ala Phe Phe Gly Asp Val Val Leu Arg		
106 111 116 121		
ttc ccg agg att gtg cac tat tac ttt gac cac aac tcc aac tgg aac	614	
Phe Pro Arg Ile Val His Tyr Tyr Phe Asp His Asn Ser Asn Trp Asn		
122 127 132 137		
ctc ctc atc cgc tgg ggt atc agt ttc tgc aac cag aca ggc gtc ttc	662	
Leu Leu Ile Arg Trp Gly Ile Ser Phe Cys Asn Gln Thr Gly Val Phe		
138 143 148 153		
aac cag ggg ccc cac tcg ccc atc ctc agc ctg atg gcc cag gag ctg	710	
Asn Gln Gly Pro His Ser Pro Ile Leu Ser Leu Met Ala Gln Glu Leu		
154 159 164 169		
ggg atc agt gag aaa gac tcc aac ttc cag aac cca ttt aaa atc gac	758	
Gly Ile Ser Glu Lys Asp Ser Asn Phe Gln Asn Pro Phe Lys Ile Asp		
170 175 180 185		
cgc aca gag ttc att ccc agc act gac cct ttc cag aag gcc ctg aga	806	
Arg Thr Glu Phe Ile Pro Ser Thr Asp Pro Phe Gln Lys Ala Leu Arg		
186 191 196 201		
gaa gaa gag aaa cgc cga aag aaa gag gag aag cgg aag gag atc cga	854	
Glu Glu Glu Lys Arg Arg Lys Lys Glu Glu Lys Arg Lys Glu Ile Arg		
202 207 212 217		
aaa ggc cca agg atc tcc aga tcc cag tct gag tta tag	893	

Lys Gly Pro Arg Ile Ser Arg Ser Gln Ser Glu Leu *
 218 223 228

<210> 936
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 <212> DNA
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<400> 936

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tttttttttg gcaaaccagt tattcaagtt tctggtcttt aaaaaactct gtggcggtac 180
ggtaaccgag gaggttccag cgcggcggaa gtaccccgcg ggtgggtgtg tgcgcaaggc 240
cagggccaga ggggcacgtg gcgccgggag gagagaga atg tct ttt cga ggc 293
Met Ser Phe Arg Gly
1
gga ggt cgt gga ggc ttt aat cga ggt ggt gga ggt ggc ggc ttc aac 341
Gly Gly Arg Gly Gly Phe Asn Arg Gly Gly Gly Gly Gly Gly Phe Asn
6 11 16 21
cga ggc ggc agc agc aac cac ttc cga ggt gga ggc ggc ggt gga ggc 389
Arg Gly Gly Ser Ser Asn His Phe Arg Gly Gly Gly Gly Gly Gly Gly Gly
22 27 32 37
ggc ggc aat ttc aga ggc ggc ggc agg gga gga ttt gga cga ggg ggt 437
Gly Gly Asn Phe Arg Gly Gly Gly Arg Gly Gly Phe Gly Arg Gly Gly
38 43 48 53
ggc cgc gga ggc ttt aac aaa ggc caa gac caa gga cct cca gaa cgt 485
Gly Arg Gly Gly Phe Asn Lys Gly Gln Asp Gln Gly Pro Pro Glu Arg
54 59 64 69
gta gtc tta tta gga gag ttc ctg cat ccc tgt gaa gat gac ata gtt 533
Val Val Leu Leu Gly Glu Phe Leu His Pro Cys Glu Asp Asp Ile Val
70 75 80 85
tgt aaa tgt acc aca gat gaa aat aag gtg cct tat ttc aat gct cct 581
Cys Lys Cys Thr Thr Asp Glu Asn Lys Val Pro Tyr Phe Asn Ala Pro
86 91 96 101
gtt tac tta gaa aac aaa gaa caa att gga aaa gtg gat gaa ata ttt 629
Val Tyr Leu Glu Asn Lys Glu Gln Ile Gly Lys Val Asp Glu Ile Phe
102 107 112 117
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gga caa ctc aga gat ttt tat ttt tca gtt aag ttg tca gaa aac atg	677
Gly Gln Leu Arg Asp Phe Tyr Phe Ser Val Lys Leu Ser Glu Asn Met	
118 123 128 133	
aag gct tca tcc ttt aaa aaa cta cag aag ttt tat ata gac cca tat	725
Lys Ala Ser Ser Phe Lys Lys Leu Gln Lys Phe Tyr Ile Asp Pro Tyr	
134 139 144 149	
aag ctg ctg cca ctg cag agg ttt tta cct cga cct cca ggt gag aaa	773
Lys Leu Leu Pro Leu Gln Arg Phe Leu Pro Arg Pro Pro Gly Glu Lys	
150 155 160 165	
gga cct cca aga ggt ggt ggc agg gga ggc cga gga gga gga aga gga	821
Gly Pro Pro Arg Gly Gly Gly Arg Gly Gly Arg Gly Gly Gly Arg Gly	
166 171 176 181	
gga ggt ggc aga ggt ggt ggc aga ggc ggt ggt ttt aga ggt gga aga	869
Gly Gly Gly Arg Gly Gly Gly Arg Gly Gly Gly Phe Arg Gly Gly Arg	
182 187 192 197	
gga ggt gga ggt ggg ggc ttc aga gga gga aga ggt ggt ggt ttc aga	917
Gly Gly Gly Gly Gly Gly Phe Arg Gly Gly Arg Gly Gly Gly Phe Arg	
198 203 208 213	
ggg aga gga cat taa gtgaaacagt tgacagacat caccagttga cttctgcatt	972
Gly Arg Gly His *	
214	
aacctgcatg atctgtttct actatggatt ggaaacttgt ttcttgaaca agtcttgaag	1032
atcttggtca ttttatgaca atggatctaa aatgtcagca tcatgcaaag tgcaacggaa	1092
tagtgaattht tgctctaaaa gagcatgaac aagtctttct aatgttttgt acagtgcctg	1152
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taaaataaag tgttttattc ccttaaaaaa aaaaaa	1248

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 <212> DNA
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 <222> (53) .. (874)

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	Met
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cga gcg gct ggc gta ggc ttg gtg gac tgt cac tgc cac ctc tcc gcc	103
Arg Ala Ala Gly Val Gly Leu Val Asp Cys His Cys His Leu Ser Ala	

2	7	12	17	
ccg gac ttt gac cgc gat ttg gat gat gtg ttg gag aaa gcc aag aag				151
Pro Asp Phe Asp Arg Asp Leu Asp Asp Val Leu Glu Lys Ala Lys Lys				
18	23	28	33	
gcc aat gtt gtg gcc ctt gtg gca gtt gcc gaa cat tca gga gaa ttt				199
Ala Asn Val Val Ala Leu Val Ala Val Ala Glu His Ser Gly Glu Phe				
34	39	44	49	
gaa aag att atg caa ctt tca gaa agg tat aat ggg ttt gtc ctg cca				247
Glu Lys Ile Met Gln Leu Ser Glu Arg Tyr Asn Gly Phe Val Leu Pro				
50	55	60	65	
tgc ttg ggt gtt cat cca gtt caa gga ctt cca cca gaa gac caa aga				295
Cys Leu Gly Val His Pro Val Gln Gly Leu Pro Pro Glu Asp Gln Arg				
66	71	76	81	
agt gtc aca cta aag gat ttg gat gta gct ttg ccc att att gag aat				343
Ser Val Thr Leu Lys Asp Leu Asp Val Ala Leu Pro Ile Ile Glu Asn				
82	87	92	97	
tat aag gat cgg ttg ttg gca att gga gag gtt gga cta gat ttc tcc				391
Tyr Lys Asp Arg Leu Leu Ala Ile Gly Glu Val Gly Leu Asp Phe Ser				
98	103	108	113	
ccc aga ttt gct ggc act ggt gaa cag aag gaa gag caa aga caa gtc				439
Pro Arg Phe Ala Gly Thr Gly Glu Gln Lys Glu Glu Gln Arg Gln Val				
114	119	124	129	
cta atc aga cag atc cag tta gcc aaa aga cta aat ttg cct gaa aat				487
Leu Ile Arg Gln Ile Gln Leu Ala Lys Arg Leu Asn Leu Pro Glu Asn				
130	135	140	145	
gcg cac tca cgc tct gct gga aga cct acc atc aac ctt tta caa gag				535
Ala His Ser Arg Ser Ala Gly Arg Pro Thr Ile Asn Leu Leu Gln Glu				
146	151	156	161	
caa ggt gct gag aag gta ctg ctg cat gca ttt gat ggt cgg cca tct				583
Gln Gly Ala Glu Lys Val Leu Leu His Ala Phe Asp Gly Arg Pro Ser				
162	167	172	177	
gta gcc atg gaa gga gta aga gct ggg tac ttc ttc tca att ccc cct				631
Val Ala Met Glu Gly Val Arg Ala Gly Tyr Phe Phe Ser Ile Pro Pro				
178	183	188	193	
tct atc ata aga agt gga cag cag aaa ctt gtg aaa caa ttg cct tta				679
Ser Ile Ile Arg Ser Gly Gln Gln Lys Leu Val Lys Gln Leu Pro Leu				
194	199	204	209	
act tct ata tgc tta gaa aca gat tca cct gca cta gga cca gaa aaa				727
Thr Ser Ile Cys Leu Glu Thr Asp Ser Pro Ala Leu Gly Pro Glu Lys				
210	215	220	225	
cag gta cgg aat gag ccc tgg aac att tct att tca gca gaa tat att				775
Gln Val Arg Asn Glu Pro Trp Asn Ile Ser Ile Ser Ala Glu Tyr Ile				
226	231	236	241	

gcc cag gtg aaa ggg atc tca gtg gaa gaa gtt ata gaa gtg acg aca 823
 Ala Gln Val Lys Gly Ile Ser Val Glu Glu Val Ile Glu Val Thr Thr
 242 247 252 257

cag aat gca tta aaa ctg ttt cct aag ctc cga cac ttg ctc cag aaa 871
 Gln Asn Ala Leu Lys Leu Phe Pro Lys Leu Arg His Leu Leu Gln Lys
 258 263 268 273

tag cttc aaaaccatcc attacaaaat cgaatcaact gcagggggca gcatttgaaa 928
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 274

aatagaaatg ttctgatgaa gaatctgaac tgaagaagct gttttatagg gttatagaag 988

attgtaattg tagagaaata tttctcttag aaataaaact gggcttggat cctgaaaccc 1048

tgggttctga ttctagcctt gtgctgcttt tcaattagcc gagttctggc aggatattgg 1108

gaaaatactg ctacttctta cattgccctt ttatatagaa ccaccacctg aactgaaacc 1168

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<210> 938

<211> 903

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (82)..(903)

<400> 938

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 Met Trp Asn Cys Leu Ser Lys Ser Leu Gly
 1 5

ctc att gaa ggt tat ggt ggg cgg gga aaa ggg ggc ctt ccg gct act 159
 Leu Ile Glu Gly Tyr Gly Gly Arg Gly Lys Gly Gly Leu Pro Ala Thr
 11 16 21 26

ctt tcc ccg gct gaa gaa aaa aag gct aag gga ccc cat gag aag tat 207
 Leu Ser Pro Ala Glu Glu Lys Lys Ala Lys Gly Pro His Glu Lys Tyr
 27 32 37 42

ggc tac aat tca tac ctc agt gaa aaa att tca ctg gac cgt tcc att 255
 Gly Tyr Asn Ser Tyr Leu Ser Glu Lys Ile Ser Leu Asp Arg Ser Ile
 43 48 53 58

ccg gat tat cgc ccc acc aag tgt aag gag ctc aag tac tcc aag gac	303
Pro Asp Tyr Arg Pro Thr Lys Cys Lys Glu Leu Lys Tyr Ser Lys Asp	
59 64 69 74	
ctg ccc cag ata tcc atc ata ttc atc ttc gtg aac gag gcc ctg tcg	351
Leu Pro Gln Ile Ser Ile Ile Phe Ile Phe Val Asn Glu Ala Leu Ser	
75 80 85 90	
gtg atc ctg cgg tcc gtg cac agt gcc gtc aat cac acg ccc aca cac	399
Val Ile Leu Arg Ser Val His Ser Ala Val Asn His Thr Pro Thr His	
91 96 101 106	
ctg ctg aag gaa atc att ctg gtg gat gac aac agc gac gaa gag gag	447
Leu Leu Lys Glu Ile Ile Leu Val Asp Asp Asn Ser Asp Glu Glu Glu	
107 112 117 122	
ctg aag gtc ccc cta gag gag tat gtc cac aaa cgc tac ccc ggg ctg	495
Leu Lys Val Pro Leu Glu Glu Tyr Val His Lys Arg Tyr Pro Gly Leu	
123 128 133 138	
gtg aag gtg gta aga aat cag aag agg gaa ggc ctg atc cgc gct cgc	543
Val Lys Val Val Arg Asn Gln Lys Arg Glu Gly Leu Ile Arg Ala Arg	
139 144 149 154	
att gag ggc tgg aag gtg gct acc ggg cag gtc act ggc ttc ttt gat	591
Ile Glu Gly Trp Lys Val Ala Thr Gly Gln Val Thr Gly Phe Phe Asp	
155 160 165 170	
gcc cac gtg gaa ttc acc gct ggc tgg gct gag ccg gtt cta tcc cgc	639
Ala His Val Glu Phe Thr Ala Gly Trp Ala Glu Pro Val Leu Ser Arg	
171 176 181 186	
atc cag gaa aac cgg aag cgt gtg atc ctc ccc tcc att gac aac atc	687
Ile Gln Glu Asn Arg Lys Arg Val Ile Leu Pro Ser Ile Asp Asn Ile	
187 192 197 202	
aaa cag gac aac ttt gag gtg cag cgg tac gag aac tcg gcc cac ggg	735
Lys Gln Asp Asn Phe Glu Val Gln Arg Tyr Glu Asn Ser Ala His Gly	
203 208 213 218	
tac agc tgg gag ctg tgg tgc atg tac atc agc ccc cca aaa gac tgg	783
Tyr Ser Trp Glu Leu Trp Cys Met Tyr Ile Ser Pro Pro Lys Asp Trp	
219 224 229 234	
tgg gac gcc gga gac cct tct ctc ccc atc agg tct gtg gct ggg ctc	831
Trp Asp Ala Gly Asp Pro Ser Leu Pro Ile Arg Ser Val Ala Gly Leu	
235 240 245 250	
aac gaa tat gta act tca cag atg agg aca agt gat tct tca gtg act	879
Asn Glu Tyr Val Thr Ser Gln Met Arg Thr Ser Asp Ser Ser Val Thr	
251 256 261 266	
tca aat gtc agc agc atg atg tga	903
Ser Asn Val Ser Ser Met Met *	
267 272	

[illegible][illegible]

Year	1970	1971	1972	1973	1974
Population	100	100	100	100	100
Area	100	100	100	100	100
Volume	100	100	100	100	100
Weight	100	100	100	100	100
Value	100	100	100	100	100
Cost	100	100	100	100	100
Price	100	100	100	100	100
Quality	100	100	100	100	100
Quantity	100	100	100	100	100
Time	100	100	100	100	100
Space	100	100	100	100	100
Energy	100	100	100	100	100
Material	100	100	100	100	100
Information	100	100	100	100	100
Communication	100	100	100	100	100
Transportation	100	100	100	100	100
Healthcare	100	100	100	100	100
Education	100	100	100	100	100
Environment	100	100	100	100	100
Security	100	100	100	100	100
Law	100	100	100	100	100
Government	100	100	100	100	100
Business	100	100	100	100	100
Industry	100	100	100	100	100
Science	100	100	100	100	100
Technology	100	100	100	100	100
Art	100	100	100	100	100
Music	100	100	100	100	100
Sports	100	100	100	100	100
Religion	100	100	100	100	100
Philosophy	100	100	100	100	100
History	100	100	100	100	100
Geography	100	100	100	100	100
Mathematics	100	100	100	100	100
Science	100	100	100	100	100
Technology	100	100	100	100	100
Art	100	100	100	100	100
Music	100	100	100	100	100
Sports	100	100	100	100	100
Religion	100	100	100	100	100
Philosophy	100	100	100	100	100
History	100	100	100	100	100
Geography	100	100	100	100	100
Mathematics	100	100	100	100	100

Ile Leu Leu Arg Gly Thr Val His Glu Lys Leu Arg Trp Thr Phe Asn	
117 122 127 132	
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Leu Tyr Asp Ile Asn Lys Asp Gly Tyr Ile Asn Lys Glu Glu Met Met	
133 138 143 148	
gac att gtc aaa gcc atc tat gac atg atg ggg aaa tac aca tat cct	836
Asp Ile Val Lys Ala Ile Tyr Asp Met Met Gly Lys Tyr Thr Tyr Pro	
149 154 159 164	
gtg ctc aaa gag gac act cca agg cag cat gtg gac gtc ttc ttc cag	884
Val Leu Lys Glu Asp Thr Pro Arg Gln His Val Asp Val Phe Phe Gln	
165 170 175 180	
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Lys Met Asp Lys Asn Lys Asp Gly Ile Val Thr Leu Asp Glu Phe Leu	
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Glu Ser Cys Gln Glu Asp Asp Asn Ile Met Arg Ser Leu Gln Leu Phe	
197 202 207 212	
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Gln Asn Val Met *	
213	
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tccaccacat ccctgcttg agcccagcgc tgcattgtccc tccaagaag tccagaatgc	1755
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 attccatcct tcgtgatggc atccataccg gggtgagatt tgaagacctt gctttctatc 240
 acccactgga ttatgcccc a ggttttccta ccca atg atc ctc ttg caa cac 292
 Met Ile Leu Leu Gln His
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 gcc gtg ctt cct cca cct aag cag ccc tca ccc tcg cct cct atg tca 340
 Ala Val Leu Pro Pro Pro Lys Gln Pro Ser Pro Ser Pro Pro Met Ser
 7 12 17 22
 gtg gcc acc agg tct aca gga acc ttg cag ctt cca cca cag aag cct 388
 Val Ala Thr Arg Ser Thr Gly Thr Leu Gln Leu Pro Pro Gln Lys Pro
 23 28 33 38
 ttt ggg cag gag gct tcc ttg cct ctt gca ggg gaa gaa gag tta tcg 436
 Phe Gly Gln Glu Ala Ser Leu Pro Leu Ala Gly Glu Glu Glu Leu Ser
 39 44 49 54
 aag gga ggg gag caa gac tgt gcc ctg gag gag cta tgt aag ccc ctg 484
 Lys Gly Gly Glu Gln Asp Cys Ala Leu Glu Glu Leu Cys Lys Pro Leu
 55 60 65 70
 tac tgc aaa ctc tgc aat gtc acc ttg aac tct gca cag caa gcc cag 532
 Tyr Cys Lys Leu Cys Asn Val Thr Leu Asn Ser Ala Gln Gln Ala Gln
 71 76 81 86
 gct cat tat cag ggt aaa aat cat ggt aag aaa ctc cga aat tac tat 580
 Ala His Tyr Gln Gly Lys Asn His Gly Lys Lys Leu Arg Asn Tyr Tyr
 87 92 97 102
 gca gca aat agc tgt cct cct cct gct aga atg agc aat gtg gtc gag 628
 Ala Ala Asn Ser Cys Pro Pro Pro Ala Arg Met Ser Asn Val Val Glu
 103 108 113 118
 cct gca gct act cca gtt gtt cca gtc cct ccg cag atg ggc tcc ttt 676
 Pro Ala Ala Thr Pro Val Val Pro Val Pro Pro Gln Met Gly Ser Phe
 119 124 129 134
 aag cca gga ggc cga gtg atc ctg gcc acg gag aat gat tac tgt aag 724
 Lys Pro Gly Gly Arg Val Ile Leu Ala Thr Glu Asn Asp Tyr Cys Lys

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Leu Cys Asp Ala Ser Phe Ser Ser Pro Ala Val Ala Gln Ala His Tyr				
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caa ggg aag aat cat gcc aag agg ctg cgg ctg gcg gaa gct cag agt				820
Gln Gly Lys Asn His Ala Lys Arg Leu Arg Leu Ala Glu Ala Gln Ser				
167	172	177	182	
aac tca ttc tcg gaa tcc tca gag ctg ggt caa cgg cgg gcc agg aaa				868
Asn Ser Phe Ser Glu Ser Ser Glu Leu Gly Gln Arg Arg Ala Arg Lys				
183	188	193	198	
gaa ggg aat gag ttt aag atg atg cct aac agg aga aat atg tat aca				916
Glu Gly Asn Glu Phe Lys Met Met Pro Asn Arg Arg Asn Met Tyr Thr				
199	204	209	214	
gta cag aat aat tca ggt cct tac ttc aat ccc cgc tct cgg cag aga				964
Val Gln Asn Asn Ser Gly Pro Tyr Phe Asn Pro Arg Ser Arg Gln Arg				
215	220	225	230	
att cca cgt gat ctg gcc atg tgt gtt act cca agt ggc cag ttt tac				1012
Ile Pro Arg Asp Leu Ala Met Cys Val Thr Pro Ser Gly Gln Phe Tyr				
231	236	241	246	
tgc tca atg tgt aat gtt gga gct ggc gaa gag atg gaa ttc cgg cag				1060
Cys Ser Met Cys Asn Val Gly Ala Gly Glu Glu Met Glu Phe Arg Gln				
247	252	257	262	
cat tta gag agc aag caa cat aag agc aag gtg tct gaa cag cgg tac				1108
His Leu Glu Ser Lys Gln His Lys Ser Lys Val Ser Glu Gln Arg Tyr				
263	268	273	278	
agg aat gag atg gag aat ctg gga tat gta tag tgattatc atattaagat				1159
Arg Asn Glu Met Glu Asn Leu Gly Tyr Val *				
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Glu Lys Leu Gly Lys Ser Val Val Ala Lys Val Lys Ile Pro Glu Gly	
290 295 300	
acc att cta aca atg gac atg ctc acc gtg aag gtg ggt gag ccc aaa	1078
Thr Ile Leu Thr Met Asp Met Leu Thr Val Lys Val Gly Glu Pro Lys	
305 310 315 320	
ggc tat cct cct gaa gac atc ttt aat cta gtg ggc aag aag gtc ctg	1126
Gly Tyr Pro Pro Glu Asp Ile Phe Asn Leu Val Gly Lys Lys Val Leu	
325 330 335	
gtc act gtt gaa gag gat gac acc atc atg gaa gaa ttg gta gat aat	1174
Val Thr Val Glu Glu Asp Asp Thr Ile Met Glu Glu Leu Val Asp Asn	
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gccgcatccc tcccgcagcg acggcggccc gggaccgcg ggctgtgaac c atg aac	177
Met Asn	
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acc cgc aat aga gtg gtg aac tcc ggg ctc ggc gcc tcc cct gcc tcc	225
Thr Arg Asn Arg Val Val Asn Ser Gly Leu Gly Ala Ser Pro Ala Ser	
5 10 15	
cgc ccg acc cgg gat ccc cag gac cct tct ggg cgg caa ggg gag ctg	273
Arg Pro Thr Arg Asp Pro Gln Asp Pro Ser Gly Arg Gln Gly Glu Leu	
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agc ccc gtg gaa gac cag aga gag ggt ttg gag gca gcc cct aag ggc	321
Ser Pro Val Glu Asp Gln Arg Glu Gly Leu Glu Ala Ala Pro Lys Gly	
35 40 45 50	
cct tcg cgg gag agc gtc gtg cac gcg ggc cag agg cgc aca agt gca	369
Pro Ser Arg Glu Ser Val Val His Ala Gly Gln Arg Arg Thr Ser Ala	
55 60 65	
tac acc ttg ata gca cca aat ata aac cgg aga aat gag ata caa aga	417

Tyr	Thr	Leu	Ile	Ala	Pro	Asn	Ile	Asn	Arg	Arg	Asn	Glu	Ile	Gln	Arg	
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att	gcg	gag	cag	gag	ctg	gcc	aac	ctg	gag	aag	tgg	aag	gag	cag	aac	465
Ile	Ala	Glu	Gln	Glu	Leu	Ala	Asn	Leu	Glu	Lys	Trp	Lys	Glu	Gln	Asn	
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Arg	Ala	Lys	Pro	Val	His	Leu	Val	Pro	Arg	Arg	Leu	Gly	Gly	Ser	Gln	
	100					105					110					
tca	gaa	act	gaa	gtc	aga	cag	aaa	caa	caa	ctc	cag	ctg	atg	caa	tct	561
Ser	Glu	Thr	Glu	Val	Arg	Gln	Lys	Gln	Gln	Leu	Gln	Leu	Met	Gln	Ser	
	115				120					125					130	
aaa	tac	aag	caa	aag	cta	aaa	aga	gaa	gaa	tct	gta	aga	atc	aag	aag	609
Lys	Tyr	Lys	Gln	Lys	Leu	Lys	Arg	Glu	Glu	Ser	Val	Arg	Ile	Lys	Lys	
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gaa	gct	gaa	gaa	gct	gaa	ctc	caa	aaa	atg	aag	gca	att	cag	aga	gag	657
Glu	Ala	Glu	Glu	Ala	Glu	Leu	Gln	Lys	Met	Lys	Ala	Ile	Gln	Arg	Glu	
			150					155					160			
aag	agc	aat	aaa	ctg	gag	gag	aaa	aaa	aga	ctt	caa	gaa	aac	ctt	aga	705
Lys	Ser	Asn	Lys	Leu	Glu	Glu	Lys	Lys	Arg	Leu	Gln	Glu	Asn	Leu	Arg	
		165					170					175				
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Arg	Glu	Ala	Phe	Arg	Glu	His	Gln	Gln	Tyr	Lys	Thr	Ala	Glu	Phe	Leu	
	180					185					190					
agc	aaa	ctg	aac	aca	gaa	tcg	cca	gac	aga	agt	gcc	tgt	caa	agt	gct	801
Ser	Lys	Leu	Asn	Thr	Glu	Ser	Pro	Asp	Arg	Ser	Ala	Cys	Gln	Ser	Ala	
	195				200					205					210	
gtt	tgt	ggc	cca	caa	tcc	tca	aca	tgg	gcc	aga	agc	tgg	gct	tac	aga	849
Val	Cys	Gly	Pro	Gln	Ser	Ser	Thr	Trp	Ala	Arg	Ser	Trp	Ala	Tyr	Arg	
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gat	tct	cta	aag	gca	gaa	gaa	aac	aga	aaa	ttg	caa	aag	atg	aag	gat	897
Asp	Ser	Leu	Lys	Ala	Glu	Glu	Asn	Arg	Lys	Leu	Gln	Lys	Met	Lys	Asp	
			230					235					240			
gaa	caa	cat	caa	aag	agt	gaa	tta	ctg	gaa	ctg	aaa	cgg	cag	cag	caa	945
Glu	Gln	His	Gln	Lys	Ser	Glu	Leu	Leu	Glu	Leu	Lys	Arg	Gln	Gln	Gln	
		245					250					255				
gag	caa	gaa	aga	gcc	aaa	atc	cac	cag	act	gaa	cac	agg	agg	gta	aat	993
Glu	Gln	Glu	Arg	Ala	Lys	Ile	His	Gln	Thr	Glu	His	Arg	Arg	Val	Asn	
	260					265					270					
aat	gct	ttt	ctg	gac	cga	ctc	caa	ggc	aaa	agt	caa	cca	ggt	ggc	ctc	1041
Asn	Ala	Phe	Leu	Asp	Arg	Leu	Gln	Gly	Lys	Ser	Gln	Pro	Gly	Gly	Leu	
	275				280					285					290	
gag	caa	tct	gga	ggc	tgt	tgg	aat	atg	aat	agc	ggt	aac	agc	tgg	ggt	1089
Glu	Gln	Ser	Gly	Gly	Cys	Trp	Asn	Met	Asn	Ser	Gly	Asn	Ser	Trp	Gly	
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Ile																

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				Met Ser Thr Ile Ala Ala		
				1 5		
ttc tat ggc ggc aag tcc att ctc atc acg ggg gcc aca ggc ttt ctg						223
Phe Tyr Gly Gly Lys Ser Ile Leu Ile Thr Gly Ala Thr Gly Phe Leu						
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aag agg tat gaa cag gag cat gct gct atc cag gat aag ctc ttc cag	401
Lys Arg Tyr Glu Gln Glu His Ala Ala Ile Gln Asp Lys Leu Phe Gln	
88 93 98 103	
gtg gca aag agg gaa aga gag gct gcc acc aag cac tcc aag gca tcc	449
Val Ala Lys Arg Glu Arg Glu Ala Ala Thr Lys His Ser Lys Ala Ser	
104 109 114 119	
ctg ccc acg ggc gaa ggc agc atc agc cat gag gag cag aag tca gtc	497
Leu Pro Thr Gly Glu Gly Ser Ile Ser His Glu Glu Gln Lys Ser Val	
120 125 130 135	
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Arg Leu Ala Arg Glu Leu Glu Ser Arg Glu Ala Glu Leu Arg Arg Arg	
136 141 146 151	
gac acc ttc tac aag gag cag ctg gag cgt att gag agg aag aat gct	593
Asp Thr Phe Tyr Lys Glu Gln Leu Glu Arg Ile Glu Arg Lys Asn Ala	
152 157 162 167	
gag atg tat aaa ctg tct tca gag caa ttc cat gag gca gcc tca aag	641
Glu Met Tyr Lys Leu Ser Ser Glu Gln Phe His Glu Ala Ala Ser Lys	
168 173 178 183	
atg gag agc aca ata aag ccc cgc agg gtg gag ccc gtc tgc tca ggg	689
Met Glu Ser Thr Ile Lys Pro Arg Arg Val Glu Pro Val Cys Ser Gly	
184 189 194 199	
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Leu Gln Ala Gln Ile Leu His Cys Tyr Arg Asp Arg Pro His Glu Val	
200 205 210 215	
ctg ctg tgc tgc gac ctg gtc aag gca tac cag cgc tgc gtg agc gcc	785
Leu Leu Cys Ser Asp Leu Val Lys Ala Tyr Gln Arg Cys Val Ser Ala	
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Ala His Lys Gly *	
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ccctgcatat gcccctgagc ctggggctgc cacgtgttta ggaaacaaag tatgcgctac	960
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188

193

198

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 Met Pro

1

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Glu Gln Ser Asn Asp Tyr Arg Val Ala Val Phe Gly Ala Gly Gly Val	
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Gly Lys Ser Ser Leu Val Leu Arg Phe Val Lys Gly Thr Phe Arg Glu	
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Ser Tyr Ile Pro Thr Val Glu Asp Thr Tyr Arg Gln Val Ile Ser Cys	
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Asp Lys Ser Ile Cys Thr Leu Gln Ile Thr Asp Thr Thr Gly Ser His	
51 56 61 66	
cag ttc ccg gcc atg cag cgg ctg tcc atc tcc aaa ggg cac gcc ttc	417
Gln Phe Pro Ala Met Gln Arg Leu Ser Ile Ser Lys Gly His Ala Phe	
67 72 77 82	
atc ctg gtg tac tcc att acc agc cga cag tcc ttg gag gag ctc aag	465
Ile Leu Val Tyr Ser Ile Thr Ser Arg Gln Ser Leu Glu Glu Leu Lys	
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Pro Ile Tyr Glu Gln Ile Cys Glu Ile Lys Gly Asp Val Glu Ser Ile	
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Pro Ile Met Leu Val Gly Asn Lys Cys Asp Glu Ser Pro Ser Arg Glu	
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Val Gln Ser Ser Glu Ala Glu Ala Leu Ala Arg Thr Trp Lys Cys Ala	
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Phe Met Glu Thr Ser Ala Lys Leu Asn His Asn Val Lys Glu Leu Phe	
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Gln Glu Leu Leu Asn Leu Glu Lys Arg Arg Thr Val Ser Leu Gln Ile	
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Asp Gly Lys Lys Ser Lys Gln Gln Lys Arg Lys Glu Lys Leu Lys Gly	
179 184 189 194	
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Lys Cys Val Ile Met *	
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gtgttaaaca ttgcatttaa tcgagatgcg tcctattgtc cttaagaggg cgtttcacac	927
caccaacagt aagccacca ctctggagtc acagaatctg ccaggcggtt caagtgaaaa	987

ccaacacact cagcatccct gggaactgag aggtgccagc aattgctgaa ggtggcgatg 1047
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2 7 12 17

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Arg Arg Gly Arg Pro Ser Pro Gln Trp Arg Ala Leu Ala Arg Leu Gly
18 23 28 33

tgg gag gac tgc cgg gac tcc aga gtc cgc gag aag cct ccc tgg cgg 201
Trp Glu Asp Cys Arg Asp Ser Arg Val Arg Glu Lys Pro Pro Trp Arg
34 39 44 49

gtg ctc ttc ttc ggc acg gac cag ttc gcc cgc gag gcg ctg cgg gcg 249
Val Leu Phe Phe Gly Thr Asp Gln Phe Ala Arg Glu Ala Leu Arg Ala
50 55 60 65

ctg cac gcc gcc agg gaa aac aaa gaa gaa gag tta atc gac aaa ctg 297
Leu His Ala Ala Arg Glu Asn Lys Glu Glu Glu Leu Ile Asp Lys Leu
66 71 76 81

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Glu Val Val Thr Met Pro Ser Pro Ser Pro Lys Gly Leu Pro Val Lys
82 87 92 97

caa tat gct gtg cag tct cag ctt ccc gta tat gag tgg ccg gat gtg 393
Gln Tyr Ala Val Gln Ser Gln Leu Pro Val Tyr Glu Trp Pro Asp Val
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Gly Ser Gly Glu Tyr Asp Val Gly Val Val Ala Ser Phe Gly Arg Leu
114 119 124 129

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His Pro Ser Cys Leu Pro Arg Trp Arg Gly Pro Ala Pro Val Ile His	
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Thr Val Leu His Gly Asp Thr Val Thr Gly Val Thr Ile Met Gln Ile	
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Arg Pro Lys Arg Phe Asp Val Gly Pro Ile Leu Lys Gln Glu Thr Val	
178 183 188 193	
cct gtg cca ccc aag agc act gca aag gaa ttg gaa gca gtg ttg tca	681
Pro Val Pro Pro Lys Ser Thr Ala Lys Glu Leu Glu Ala Val Leu Ser	
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Arg Leu Gly Ala Asn Met Leu Ile Ser Val Leu Lys Asn Leu Pro Glu	
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Ser Leu Ser Asn Gly Arg Gln Gln Pro Met Glu Gly Ala Thr Tyr Ala	
226 231 236 241	
cct aag att tct gct ggt acc agt tgt ata aaa tgg gag gaa caa act	825
Pro Lys Ile Ser Ala Gly Thr Ser Cys Ile Lys Trp Glu Glu Gln Thr	
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tca gaa caa ata ttc aga ctt tac cgt gcc att gga aat ata att ccg	873
Ser Glu Gln Ile Phe Arg Leu Tyr Arg Ala Ile Gly Asn Ile Ile Pro	
258 263 268 273	
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Leu Gln Thr Leu Trp Met Ala Asn Thr Ile Lys Leu Leu Asp Leu Val	
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gaa gtt aac agt tca gtc ctt gct gat cca aaa tta acg gga cag gct	969
Glu Val Asn Ser Ser Val Leu Ala Asp Pro Lys Leu Thr Gly Gln Ala	
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ctt att cca gga tca gta ata tac cac aaa cag tca caa ata cta ttg	1017
Leu Ile Pro Gly Ser Val Ile Tyr His Lys Gln Ser Gln Ile Leu Leu	
306 311 316 321	
gtt tat tgc aag gat ggt tgg att ggt gtt cga tca gtg atg ctc aag	1065
Val Tyr Cys Lys Asp Gly Trp Ile Gly Val Arg Ser Val Met Leu Lys	
322 327 332 337	
aaa tca cta aca gct act gac ttc tac aat gga tat taa cacacatggg	1114
Lys Ser Leu Thr Ala Thr Asp Phe Tyr Asn Gly Tyr *	
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Met Ser Glu Leu Pro Gly Asp	
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Val Arg Ala Phe Leu Arg Glu His Pro Ser Leu Arg Leu Gln Thr Asp	
8 13 18 23	
gcc cgc aag gtg agg tgc atc ctg aca ggt cac gag ctg ccc tgc cgc	568
Ala Arg Lys Val Arg Cys Ile Leu Thr Gly His Glu Leu Pro Cys Arg	
24 29 34 39	
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Leu Pro Glu Leu Gln Val Tyr Thr Arg Gly Lys Lys Tyr Gln Arg Leu	
40 45 50 55	
gtc cgc gcc tcc ccg gcc ttc gac tat gca gag ttc gag ccg cac atc	664
Val Arg Ala Ser Pro Ala Phe Asp Tyr Ala Glu Phe Glu Pro His Ile	
56 61 66 71	
gtg ccc agc acc aag aac ccg cac cag ttg ttc tgc aaa ctc acc ctg	712
Val Pro Ser Thr Lys Asn Pro His Gln Leu Phe Cys Lys Leu Thr Leu	
72 77 82 87	
cgg cac atc aac aag tgc cca gaa cac gtg ctg agg cac acc cag ggc	760
Arg His Ile Asn Lys Cys Pro Glu His Val Leu Arg His Thr Gln Gly	
88 93 98 103	

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Arg Arg Tyr Gln Arg Ala Leu Cys Lys Tyr Glu Glu Cys Gln Lys Gln	
104 109 114 119	
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Gly Val Glu Tyr Val Pro Ala Cys Leu Val His Arg Arg Arg Arg Arg	
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Glu Asp Gln Met Asp Gly Asp Gly Pro Arg Pro Arg Glu Ala Phe Trp	
136 141 146 151	
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Glu Pro Thr Ser Ser Asp Glu Gly Gly Ala Ala Ser Asp Asp Ser Met	
152 157 162 167	
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168 173 178 183	
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Thr Glu Asp Gly Asp Gly Thr Asp Asp Phe Leu Thr Asp Lys Glu Asp	
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Glu Lys Ala Lys Pro Pro Arg Glu Lys Ala Thr Asp Glu Gly Arg Arg	
200 205 210 215	
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Glu Thr Thr Val Tyr Arg Gly Leu Val Gln Lys Arg Gly Lys Lys Gln	
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Leu Gly Ser Leu Lys Lys Lys Phe Lys Ser His His Arg Lys Pro Lys	
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tctccttcag tacttggaat ctgatctctt ctccctaatt ctgaggatcc ggcccctaatt 360

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cactttcttc tccaccccat gctagcgagg ataacttatt tctcttctgg aattgcatct 480

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tggggcctga ctcttcagt gaagcctctc cagccctct atctgcaggt cccagcctg 660

ggtaaag atg gcc cca tgg ccc ccg aag ggc cta gtc cca gct gtg ctc 709
Met Ala Pro Trp Pro Pro Lys Gly Leu Val Pro Ala Val Leu
1 5 10

tgg ggc ctc agc ctc ttc ctc aac ctc cca gga cct atc tgg ctc cag 757
Trp Gly Leu Ser Leu Phe Leu Asn Leu Pro Gly Pro Ile Trp Leu Gln
15 20 25 30

ccc tct cca cct ccc cag tct tct ccc ccg cct cag ccc cat ccg tgt 805
Pro Ser Pro Pro Pro Gln Ser Ser Pro Pro Pro Gln Pro His Pro Cys
31 36 41 46

cat acc tgc cgg gga ctg gtt gac agc ttt aac aag ggc ctg gag aga 853
His Thr Cys Arg Gly Leu Val Asp Ser Phe Asn Lys Gly Leu Glu Arg
47 52 57 62

acc atc cgg gac aac ttt gga ggt gga aac act gcc tgg gag gaa gag 901
Thr Ile Arg Asp Asn Phe Gly Gly Gly Asn Thr Ala Trp Glu Glu Glu
63 68 73 78

aat ttg tcc aaa tac aaa gac agt gag acc cgc ctg gta gag gtg ctg 949
Asn Leu Ser Lys Tyr Lys Asp Ser Glu Thr Arg Leu Val Glu Val Leu
79 84 89 94

gag ggt gtg tgc agc aag tca gac ttc gag tgc cac cgc ctg ctg gag 997
Glu Gly Val Cys Ser Lys Ser Asp Phe Glu Cys His Arg Leu Leu Glu
95 100 105 110

ctg agt gag gag ctg gtg gag agc tgg tgg ttt cac aag cag cag gag 1045
Leu Ser Glu Glu Leu Val Glu Ser Trp Trp Phe His Lys Gln Gln Glu
111 116 121 126

gcc ccg gac ctc ttc cag tgg ctg tgc tca gat tcc ctg aag ctc tgc 1093
Ala Pro Asp Leu Phe Gln Trp Leu Cys Ser Asp Ser Leu Lys Leu Cys
127 132 137 142

tgc ccc gca ggc acc ttc ggg ccc tcc tgc ctt ccc tgt cct ggg gga 1141

Cys Pro Ala Gly Thr Phe Gly Pro Ser Cys Leu Pro Cys Pro Gly Gly	
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Thr Glu Arg Pro Cys Gly Gly Tyr Gly Gln Cys Glu Gly Glu Gly Thr	
159 164 169 174	
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Arg Gly Gly Ser Gly His Cys Asp Cys Gln Ala Gly Tyr Gly Gly Glu	
175 180 185 190	
gcc tgt ggc cag tgt ggc ctt ggc tac ttt gag gca gaa cgc aac gcc	1285
Ala Cys Gly Gln Cys Gly Leu Gly Tyr Phe Glu Ala Glu Arg Asn Ala	
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Ser His Leu Val Cys Ser Ala Cys Phe Gly Pro Cys Ala Arg Cys Ser	
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Gly Pro Glu Glu Ser Asn Cys Leu Gln Cys Lys Lys Gly Trp Ala Leu	
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His His Leu Lys Cys Val Asp Ile Asp Glu Cys Gly Thr Glu Gly Ala	
239 244 249 254	
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Asn Cys Gly Ala Asp Gln Phe Cys Val Asn Thr Glu Gly Ser Tyr Glu	
255 260 265 270	
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Cys Arg Asp Cys Ala Lys Ala Cys Leu Gly Cys Met Gly Ala Gly Pro	
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Gly Tyr Lys Gln Met Glu Gly Ile Cys Val Lys Glu Gln Ile Pro Glu	
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Ala Met Thr Gly Tyr	Trp Leu Ser Glu Arg	Ser Asp Arg Val Leu Glu			
399	404	409	414		
ggc ttc atc aag ggc	aga taa tc gcggccacca	cctgtaggac ctcctccac		1962	
Gly Phe Ile Lys Gly	Arg *				
415	420				
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Met Ala Trp Gln Val Ser Leu Leu Glu Leu Glu Asp	

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gac ggc agc agc tcc ttg ccc aac gtc tcc ctg gcc tgg gtg atc gaa Asp Gly Ser Ser Ser Leu Pro Asn Val Ser Leu Ala Trp Val Ile Glu 61 66 71 76			602
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cgg aac ccg ctc agc ctt ttc tgc gag aag gac cag gag ctc atc tgt Arg Asn Pro Leu Ser Leu Phe Cys Glu Lys Asp Gln Glu Leu Ile Cys 93 98 103 108			698
ggc ctc tgc ggt ctg ctg ggc tcc cac caa cac cac ccg gtc acg ccc Gly Leu Cys Gly Leu Leu Gly Ser His Gln His His Pro Val Thr Pro 109 114 119 124			746
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 Met Val Gly Ser Leu Asn Cys Ile Val Ala Val
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 Ser Gln Asn Met Gly Ile Gly Lys Asn Gly Asp Leu Pro Trp Pro Pro
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 Ser Ile Pro Glu Lys Asn Arg Pro Leu Lys Gly Arg Ile Asn Leu Val
 60 65 70 75
 ctc agc aga gaa ctc aag gaa cct cca caa gga gct cat ttt ctt tcc 530
 Leu Ser Arg Glu Leu Lys Glu Pro Pro Gln Gly Ala His Phe Leu Ser
 76 81 86 91
 aga agt cta gat gat gcc tta aaa ctt act gaa caa cca gaa tta gca 578
 Arg Ser Leu Asp Asp Ala Leu Lys Leu Thr Glu Gln Pro Glu Leu Ala
 92 97 102 107
 aat aaa gta gac atg gtc tgg ata gtt ggt ggc agt tct gtt tat aag 626
 Asn Lys Val Asp Met Val Trp Ile Val Gly Gly Ser Ser Val Tyr Lys

108	113	118	123	
gaa gcc atg aat cac cca ggc cat ctt aaa cta ttt gtg aca agg atc				674
Glu Ala Met Asn His Pro Gly His Leu Lys Leu Phe Val Thr Arg Ile				
124	129	134	139	
atg caa gac ttt gaa agt gac acg ttt ttt cca gaa att gat ttg gag				722
Met Gln Asp Phe Glu Ser Asp Thr Phe Phe Pro Glu Ile Asp Leu Glu				
140	145	150	155	
aaa tat aaa ctt ctg cca gaa tac cca ggt gtt ctc tct gat gtc cag				770
Lys Tyr Lys Leu Leu Pro Glu Tyr Pro Gly Val Leu Ser Asp Val Gln				
156	161	166	171	
gag gag aaa ggc att aag tac aaa ttt gaa gta tat gag aag aat gat				818
Glu Glu Lys Gly Ile Lys Tyr Lys Phe Glu Val Tyr Glu Lys Asn Asp				
172	177	182	187	

taa tatg aaggtgtttt ctagttaaag ttgttcccc tccctctgaa aaaagtatgt	875
*	
188	
atttttacat tagaaaaggt tttttgttga ctttagatct ataattatatt ctaagcaact	935
agtttttatt cccactact cttgtctcta tcagatacca tttatgagac attcttgcta	995
taactaagtg cttctccaag accccaactg agtccccagc acctgctaca gtgagctgcc	1055
attccacacc catcacatgt ggcactcttg ccagtccttg acattgtcgg gcttttcaca	1115
tgttggtaat atttattaaa gatgaagatc cacataccct tcaaaaaaaaa aaaa	1169

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 <212> DNA
 <213> Homo sapiens

<220>
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cgagg atg gcg gcg gag aac gag gcc agc cag gag agc gcc ctg ggc	167
Met Ala Ala Glu Asn Glu Ala Ser Gln Glu Ser Ala Leu Gly	
1 5 10	
gcc tac tcg cca gtg gac tac atg agc atc acc agc ttc ccg cgg ctg	215
Ala Tyr Ser Pro Val Asp Tyr Met Ser Ile Thr Ser Phe Pro Arg Leu	
15 20 25 30	

ccc gag gac gag ccg gcg ccc gcg gcc ccg ctg agg ggc cgc aag gac	263
Pro Glu Asp Glu Pro Ala Pro Ala Ala Pro Leu Arg Gly Arg Lys Asp	
31 36 41 46	
gag gac gcc ttt ctg gga gac ccc gac acc gac ccg gac tcc ttc ctg	311
Glu Asp Ala Phe Leu Gly Asp Pro Asp Thr Asp Pro Asp Ser Phe Leu	
47 52 57 62	
aag tct gca cgg ctg cag cgg ctg cca tcc tcc tcc tcc gag atg ggc	359
Lys Ser Ala Arg Leu Gln Arg Leu Pro Ser Ser Ser Ser Glu Met Gly	
63 68 73 78	
agc caa gac ggg tcc ccg cta cgc gag acg cgc aaa gac ccg ttc tcc	407
Ser Gln Asp Gly Ser Pro Leu Arg Glu Thr Arg Lys Asp Pro Phe Ser	
79 84 89 94	
gcc gca gcg gcc gag tgc tcc tgc cgc cag gat ggg ctc acg gtc atc	455
Ala Ala Ala Ala Glu Cys Ser Cys Arg Gln Asp Gly Leu Thr Val Ile	
95 100 105 110	
gtc acg gcc tgt ctc acc ttc gct acc ggt gtc acc gtg gcg ctg gtc	503
Val Thr Ala Cys Leu Thr Phe Ala Thr Gly Val Thr Val Ala Leu Val	
111 116 121 126	
atg cag atc tac ttc ggg gac ccc cag atc ttc cag cag ggt gcc gtg	551
Met Gln Ile Tyr Phe Gly Asp Pro Gln Ile Phe Gln Gln Gly Ala Val	
127 132 137 142	
gtg acc gat gct gcc cgc tgc act tca ctg ggc atc gag gtg ctc agt	599
Val Thr Asp Ala Ala Arg Cys Thr Ser Leu Gly Ile Glu Val Leu Ser	
143 148 153 158	
aaa cag gga tct tct gtg gac gca gcg gtg gca gca gcc ttg tgt ttg	647
Lys Gln Gly Ser Ser Val Asp Ala Ala Val Ala Ala Ala Leu Cys Leu	
159 164 169 174	
ggt atc gtg gct cca cac agt tct ggc ctg ggc ggt ggg ggc gtg atg	695
Gly Ile Val Ala Pro His Ser Ser Gly Leu Gly Gly Gly Gly Val Met	
175 180 185 190	
ctg gta cat gac atc cga cga aat gag agc cac cta att gat ttc cgg	743
Leu Val His Asp Ile Arg Arg Asn Glu Ser His Leu Ile Asp Phe Arg	
191 196 201 206	
gag tcc gca cca ggg gcc ctc agg gaa gag acc ctg caa aga tcc tgg	791
Glu Ser Ala Pro Gly Ala Leu Arg Glu Glu Thr Leu Gln Arg Ser Trp	
207 212 217 222	
gag acc aag cct ggg ctc ttg gtg ggg gtt ccc gga atg gtg aag ggg	839
Glu Thr Lys Pro Gly Leu Leu Val Gly Val Pro Gly Met Val Lys Gly	
223 228 233 238	
cta cat gaa gct cac cag ctc tat ggc agg ctg cca tgg tcc caa gtc	887
Leu His Glu Ala His Gln Leu Tyr Gly Arg Leu Pro Trp Ser Gln Val	
239 244 249 254	
ctg gcc ttt gca gca gct gtg gcc caa gat ggc ttc aac gtg act cat	935

Leu Ala Phe Ala Ala Ala Val Ala Gln Asp Gly Phe Asn Val Thr His	
255 260 265 270	
gat cta gcc cgt gcc ctg gct gaa cag ctg cca ccc aac atg tcc gag	983
Asp Leu Ala Arg Ala Leu Ala Glu Gln Leu Pro Pro Asn Met Ser Glu	
271 276 281 286	
cgc ttc cgg gag acg ttc ctg cca tcg ggc cgc ccg cca cta cct ggc	1031
Arg Phe Arg Glu Thr Phe Leu Pro Ser Gly Arg Pro Pro Leu Pro Gly	
287 292 297 302	
tcg ttg ctg cat cgg ccc gac ctg gct gag gtg ctg gat gta ctt ggc	1079
Ser Leu Leu His Arg Pro Asp Leu Ala Glu Val Leu Asp Val Leu Gly	
303 308 313 318	
acc tcc ggc ccg gct gcc ttc tac gca ggt ggc aac ctc aca ctg gag	1127
Thr Ser Gly Pro Ala Ala Phe Tyr Ala Gly Gly Asn Leu Thr Leu Glu	
319 324 329 334	
atg gtg gcc gag gct cag cac gca ggg ggt gtc ata acc gaa gag gac	1175
Met Val Ala Glu Ala Gln His Ala Gly Gly Val Ile Thr Glu Glu Asp	
335 340 345 350	
ttc agc aat tac agc gcc ctt gtg gag aag cct gtg tgt ggc gtg tac	1223
Phe Ser Asn Tyr Ser Ala Leu Val Glu Lys Pro Val Cys Gly Val Tyr	
351 356 361 366	
aga ggc cac ctg gtt ctt agt ccc cca cct ccg cac acg ggc cct gcc	1271
Arg Gly His Leu Val Leu Ser Pro Pro Pro Pro His Thr Gly Pro Ala	
367 372 377 382	
ctc atc agt gct ctc aac atc ctg gag ggc ttc aat ctc acc agc ctg	1319
Leu Ile Ser Ala Leu Asn Ile Leu Glu Gly Phe Asn Leu Thr Ser Leu	
383 388 393 398	
gta tcc cga gaa cag gct ctt cac tgg gtg gca gag acc ctg aag att	1367
Val Ser Arg Glu Gln Ala Leu His Trp Val Ala Glu Thr Leu Lys Ile	
399 404 409 414	
gca tta gcc ctg gcc agc aga ctg gga gat ccc gtc tat gat tct acc	1415
Ala Leu Ala Leu Ala Ser Arg Leu Gly Asp Pro Val Tyr Asp Ser Thr	
415 420 425 430	
atc act gag agc atg gat gac atg ctc agc aag gtg gag gcc gcc tac	1463
Ile Thr Glu Ser Met Asp Asp Met Leu Ser Lys Val Glu Ala Ala Tyr	
431 436 441 446	
ctc cgg ggc cat atc aat gac tcc cag gca gcc cct gcc cca ctc ctg	1511
Leu Arg Gly His Ile Asn Asp Ser Gln Ala Ala Pro Ala Pro Leu Leu	
447 452 457 462	
cct gtc tat gaa cta gac gga gct ccc acg gct gcc cag gtg ctg atc	1559
Pro Val Tyr Glu Leu Asp Gly Ala Pro Thr Ala Ala Gln Val Leu Ile	
463 468 473 478	
atg gga cct gat gac ttc att gtg gcc atg gtt agc tcc ctg aac cag	1607
Met Gly Pro Asp Asp Phe Ile Val Ala Met Val Ser Ser Leu Asn Gln	

479	484	489	494	
ccc ttt ggc agc ggc ctt atc acc ccc tcg ggg atc ctg ctc aac agc				1655
Pro Phe Gly Ser Gly Leu Ile Thr Pro Ser Gly Ile Leu Leu Asn Ser				
495	500	505	510	
cag atg ctg gac ttc tcc tgg ccc aac cgg aca gct aac cac tct gca				1703
Gln Met Leu Asp Phe Ser Trp Pro Asn Arg Thr Ala Asn His Ser Ala				
511	516	521	526	
ccc agc ctg gag aat tca gtg cag cca ggg aag cgg cca ctc tct ttc				1751
Pro Ser Leu Glu Asn Ser Val Gln Pro Gly Lys Arg Pro Leu Ser Phe				
527	532	537	542	
ctg ctg ccc aca gtg gtc cga ccc gcg gag ggg ctc tgt gga acc tac				1799
Leu Leu Pro Thr Val Val Arg Pro Ala Glu Gly Leu Cys Gly Thr Tyr				
543	548	553	558	
ctc gct ctg ggg gcc aat gga gct gcg cgg ggc ctc agc ggc ctg aca				1847
Leu Ala Leu Gly Ala Asn Gly Ala Ala Arg Gly Leu Ser Gly Leu Thr				
559	564	569	574	
cag gtt ctg ctg aat gtc ctg acc ttg aac cgg aac ctg agt gac agc				1895
Gln Val Leu Leu Asn Val Leu Thr Leu Asn Arg Asn Leu Ser Asp Ser				
575	580	585	590	
ctg gcc cgc ggc cgc cta cac ccg gac ctg cag tcc aac ctc ctg cag				1943
Leu Ala Arg Gly Arg Leu His Pro Asp Leu Gln Ser Asn Leu Leu Gln				
591	596	601	606	
gtg gac agt gag ttc aca gag gaa gag att gag ttc ctg gaa gcc agg				1991
Val Asp Ser Glu Phe Thr Glu Glu Glu Ile Glu Phe Leu Glu Ala Arg				
607	612	617	622	
ggt cac cac gtg gag aaa gta gat gtc tta tcc tgg gtc cat ggc agc				2039
Gly His His Val Glu Lys Val Asp Val Leu Ser Trp Val His Gly Ser				
623	628	633	638	
cga agg acc aac aac ttc atc atc gct gtt aag gac cct cgg agc cca				2087
Arg Arg Thr Asn Asn Phe Ile Ile Ala Val Lys Asp Pro Arg Ser Pro				
639	644	649	654	
gat gca gct gga gcc acc atc ctg tag				2114
Asp Ala Ala Gly Ala Thr Ile Leu *				
655	660			

<210> 953
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 <212> DNA /
 <213> Homo sapiens

<220>
 <221> CDS

<222> (75) .. (779)

<400> 953

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cgcccggcgc gggc atg ggg agg gcc ggc gcc gcg gcc aac ggc acc ccg	110
Met Gly Arg Ala Gly Ala Ala Ala Asn Gly Thr Pro	
1 5 10	
cag aac gtc cag ggc atc acc tcc tac cag cag cgt tta caa gca ttg	158
Gln Asn Val Gln Gly Ile Thr Ser Tyr Gln Gln Arg Leu Gln Ala Leu	
13 18 23 28	
aga aag gag aaa tcc cga gat gct gct cgc tcc cgc cgg gga aaa gaa	206
Arg Lys Glu Lys Ser Arg Asp Ala Ala Arg Ser Arg Arg Gly Lys Glu	
29 34 39 44	
aac ttt gag ttc tat gaa ttg gcc aag ttg ttg cct ctt cct gca gcc	254
Asn Phe Glu Phe Tyr Glu Leu Ala Lys Leu Leu Pro Leu Pro Ala Ala	
45 50 55 60	
att acc agc cag ctc gac aag gca tcc atc att cga ctt aca att agc	302
Ile Thr Ser Gln Leu Asp Lys Ala Ser Ile Ile Arg Leu Thr Ile Ser	
61 66 71 76	
tat ctg aaa atg agg gac ttt gct aac cag ggg gac cct ccg tgg aac	350
Tyr Leu Lys Met Arg Asp Phe Ala Asn Gln Gly Asp Pro Pro Trp Asn	
77 82 87 92	
ttg cga atg gaa ggc cct cca cct aac aca tca gta aaa gtt ata ggt	398
Leu Arg Met Glu Gly Pro Pro Pro Asn Thr Ser Val Lys Val Ile Gly	
93 98 103 108	
gca cag cga agg aga agc ccc agt gca cta gcc att gaa gta ttt gaa	446
Ala Gln Arg Arg Arg Ser Pro Ser Ala Leu Ala Ile Glu Val Phe Glu	
109 114 119 124	
gca cat ttg gga agc cac att ttg cag tcc ctg gat ggc ttt gta ttt	494
Ala His Leu Gly Ser His Ile Leu Gln Ser Leu Asp Gly Phe Val Phe	
125 130 135 140	
gca cta aat cag gaa gga aaa ttt ttg tac att tcc gaa aca gtc tcc	542
Ala Leu Asn Gln Glu Gly Lys Phe Leu Tyr Ile Ser Glu Thr Val Ser	
141 146 151 156	
atc tac cta ggc ctc tca caa gtg gag ctg aca ggc agc agt gtc ttt	590
Ile Tyr Leu Gly Leu Ser Gln Val Glu Leu Thr Gly Ser Ser Val Phe	
157 162 167 172	
gac tat gtc cac ccc gga gat cac gtg gag atg gct gag cag ctg ggc	638
Asp Tyr Val His Pro Gly Asp His Val Glu Met Ala Glu Gln Leu Gly	
173 178 183 188	
atg aag ctc ccc cct ggg cgg ggt ctc ctg tca cag ggc act gct gag	686
Met Lys Leu Pro Pro Gly Arg Gly Leu Leu Ser Gln Gly Thr Ala Glu	
189 194 199 204	

gac gga gcc agc tca gca tct tcc tcc tct cag tcg gag acc ccc gag 734
 Asp Gly Ala Ser Ser Ala Ser Ser Ser Ser Gln Ser Glu Thr Pro Glu
 205 210 215 220

cca gtg gtt tgc ttc cca cca gcg agt gat cag ttt ctt ctg tag gac 782
 Pro Val Val Cys Phe Pro Pro Ala Ser Asp Gln Phe Leu Leu *
 221 226 231

ccctgtcagg aagaacatgc ctggatccta cttcagagag aactcagcca gggcaagggg 842

ctcctgtggc tttttgggtg ggtgtgagtt catagagggg aaatcaatac tgtaccagga 902

tttagacaat ttagcaaaat gcacgaggca gtacttttga tgatgaataa ctacagctgc 962

atggctaacc cattgggtgt gtaaagtatg ggttatcatg ttttgtctaa attttcaggc 1022

aaaatctagc ctgttttgtg gcattaggat catcattata gtagtatgat ttttatgcta 1082

ttatacttac gctatgtccc gaatgttttt aaggccagca aaatggaaac agtagagtac 1142

ttgcctgaat gcaaataaac ttcagtttca acttaaaaga caaggaggga agaaaccctt 1202

gtgccgaatc tcatgtcgag ggcaactcct at 1234

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 <211> 641
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (103) .. (360)

<400> 954

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caagaagaga ccgaggcggg tggccccgag agagccaggg cc atg gag gcc aac 114
 Met Glu Ala Asn
 1

atg ccg aag cgg aag gag cct ggc agg tct ctc cgc atc aaa gtc atc 162
 Met Pro Lys Arg Lys Glu Pro Gly Arg Ser Leu Arg Ile Lys Val Ile
 5 10 15 20

tcc atg ggc aac gcc gaa gtg ggg aaa agc tgt att ata aag cga tac 210
 Ser Met Gly Asn Ala Glu Val Gly Lys Ser Cys Ile Ile Lys Arg Tyr
 21 26 31 36

tgt gag aaa aga ttt gtg tct aaa tac ctg gca aca att gga att gac 258
 Cys Glu Lys Arg Phe Val Ser Lys Tyr Leu Ala Thr Ile Gly Ile Asp
 37 42 47 52

tat gga gtc aca aag gta cac gtc aga gac aga gaa atc aaa gtt aac 306
 Tyr Gly Val Thr Lys Val His Val Arg Asp Arg Glu Ile Lys Val Asn

53	58	63	68	
atc ttt gat atg gct gga cat ccc ttc ttc tat gag gta aga aag cct				354
Ile Phe Asp Met Ala Gly His Pro Phe Phe Tyr Glu Val Arg Lys Pro				
69	74	79	84	
ttt tga caaaacctat atccagtatt gttggtggtt tggggagaga tccagaatta				410
Phe *				
85				
tatgaaacaa ccaatattga tatcatgtgt aaaattgcat aatttttagct tgatcgtggc				470
ttgccttcag agccttgagt taatagacaa ctgttgattt tttagggttat cctgtttaat				530
agtggtagga aatttcattg ccaatatttc aaacatttca ataagacatt ttgactttca				590
gaggactttt gctttttacc tcatacttta gcctaaaatg tgaaaaaaaa a				641

<210> 955
 <211> 1884
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (69)..(1700)

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tatatgcc atg tat gtt cgc cag act gta ctt aaa gtt atc aaa ttc cta	110
Met Tyr Val Arg Gln Thr Val Leu Lys Val Ile Lys Phe Leu	
1 5 10	
atc atc att gca tat aat agt gct ctg gtt tcc aag gtc cag ttt aca	158
Ile Ile Ile Ala Tyr Asn Ser Ala Leu Val Ser Lys Val Gln Phe Thr	
15 20 25 30	
gtg gac tgt aat gtg gac att cag gac atg act gga tat aaa aac ttt	206
Val Asp Cys Asn Val Asp Ile Gln Asp Met Thr Gly Tyr Lys Asn Phe	
31 36 41 46	
tct tgc aat cat acc atg gca cac ttg ttc tca aaa ctg tcc ttt tgc	254
Ser Cys Asn His Thr Met Ala His Leu Phe Ser Lys Leu Ser Phe Cys	
47 52 57 62	
tat ctg tgc ttt gtt agt atc tat gga ttg acg tgc ctt tat acc tta	302
Tyr Leu Cys Phe Val Ser Ile Tyr Gly Leu Thr Cys Leu Tyr Thr Leu	
63 68 73 78	
tac tgg ctg ttc tac cgt tct cta cgg gaa tat tcc ttt gag tat gtc	350
Tyr Trp Leu Phe Tyr Arg Ser Leu Arg Glu Tyr Ser Phe Glu Tyr Val	
79 84 89 94	

cgt cag gag act gga ttt gat gat att cca gat gtg aaa aat gac ttt	398
Arg Gln Glu Thr Gly Phe Asp Asp Ile Pro Asp Val Lys Asn Asp Phe	
95 100 105 110	
gct ttt atg ctt cat atg ata gat cag tat gac cct ctc tat tcc aag	446
Ala Phe Met Leu His Met Ile Asp Gln Tyr Asp Pro Leu Tyr Ser Lys	
111 116 121 126	
aga ttt gca gtg ttc ctg tct gaa gtc agt gaa aac aaa tta aag cag	494
Arg Phe Ala Val Phe Leu Ser Glu Val Ser Glu Asn Lys Leu Lys Gln	
127 132 137 142	
ctg aac tta aat aac gaa tgg act cct gat aaa ctg agg cag aag cta	542
Leu Asn Leu Asn Asn Glu Trp Thr Pro Asp Lys Leu Arg Gln Lys Leu	
143 148 153 158	
cag aca aat gcc cat aat cga ctg gaa ttg cct ctt atc atg ctc tct	590
Gln Thr Asn Ala His Asn Arg Leu Glu Leu Pro Leu Ile Met Leu Ser	
159 164 169 174	
ggc ctt cca gac act gtt ttt gaa atc aca gag ttg caa tct cta aaa	638
Gly Leu Pro Asp Thr Val Phe Glu Ile Thr Glu Leu Gln Ser Leu Lys	
175 180 185 190	
ctt gaa atc att aag aac gta atg ata cca gcc acc att gca cag cta	686
Leu Glu Ile Ile Lys Asn Val Met Ile Pro Ala Thr Ile Ala Gln Leu	
191 196 201 206	
gac aat ctt caa gag ctc tct ctg cac cag tgt tct gtc aaa atc cac	734
Asp Asn Leu Gln Glu Leu Ser Leu His Gln Cys Ser Val Lys Ile His	
207 212 217 222	
agt gcg gcg ctc tct ttc ctg aag gaa aac ctc aag gtc ttg agc gtc	782
Ser Ala Ala Leu Ser Phe Leu Lys Glu Asn Leu Lys Val Leu Ser Val	
223 228 233 238	
aag ttt gat gac atg agg gaa ctc ccc ccc tgg atg tat ggg ctc cga	830
Lys Phe Asp Asp Met Arg Glu Leu Pro Pro Trp Met Tyr Gly Leu Arg	
239 244 249 254	
aat ctg gaa gag ctg tac cta gtt ggc tct cta agt cat gat att tcc	878
Asn Leu Glu Glu Leu Tyr Leu Val Gly Ser Leu Ser His Asp Ile Ser	
255 260 265 270	
aga aat gtc acc ctt gag tct ctg cgg gat ctc aaa agc ctt aaa att	926
Arg Asn Val Thr Leu Glu Ser Leu Arg Asp Leu Lys Ser Leu Lys Ile	
271 276 281 286	
ctc tct atc aaa agc aac gtt tcc aaa atc cct cag gca gtg gtt gat	974
Leu Ser Ile Lys Ser Asn Val Ser Lys Ile Pro Gln Ala Val Val Asp	
287 292 297 302	
gtt tcc agc cat ctc cag aag atg tgc ata cat aat gat ggc acc aag	1022
Val Ser Ser His Leu Gln Lys Met Cys Ile His Asn Asp Gly Thr Lys	
303 308 313 318	
ctg gtg atg ctc aac aac tta aag aag atg acc aat ctg aca gag ctg	1070

Leu Val Met Leu Asn Asn Leu Lys Lys Met Thr Asn Leu Thr Glu Leu	
319 324 329 334	
gag ctg gtc cac tgt gac ctg gag cgt att cct cat gct gtg ttc agc	1118
Glu Leu Val His Cys Asp Leu Glu Arg Ile Pro His Ala Val Phe Ser	
335 340 345 350	
cta ctc agc ctc cag gaa ttg gac ctg aag gaa aac aat ctg aaa tct	1166
Leu Leu Ser Leu Gln Glu Leu Asp Leu Lys Glu Asn Asn Leu Lys Ser	
351 356 361 366	
ata gaa gaa atc gtt agc ttt cag cac tta aga aag ttg aca gtg cta	1214
Ile Glu Glu Ile Val Ser Phe Gln His Leu Arg Lys Leu Thr Val Leu	
367 372 377 382	
aaa ctg tgg cat aac agc atc acc tac atc cca gag cat ata aag aaa	1262
Lys Leu Trp His Asn Ser Ile Thr Tyr Ile Pro Glu His Ile Lys Lys	
383 388 393 398	
ctc acc agc ctg gaa cgc ctg tcc ttt agt cac aat aaa ata gag gtg	1310
Leu Thr Ser Leu Glu Arg Leu Ser Phe Ser His Asn Lys Ile Glu Val	
399 404 409 414	
ctg cct tcc cac ctc ttc cta tgc aac aag atc cga tac ttg gac tta	1358
Leu Pro Ser His Leu Phe Leu Cys Asn Lys Ile Arg Tyr Leu Asp Leu	
415 420 425 430	
tcg tac aat gac att cga ttt atc ccc cct gaa att gga gtt cta caa	1406
Ser Tyr Asn Asp Ile Arg Phe Ile Pro Pro Glu Ile Gly Val Leu Gln	
431 436 441 446	
agt tta cag tat ttt tcc atc aca tgt aac aaa gtg gaa agc ctt cca	1454
Ser Leu Gln Tyr Phe Ser Ile Thr Cys Asn Lys Val Glu Ser Leu Pro	
447 452 457 462	
gat gaa ctc tac ttc tgc aag aaa ctt aaa act ctg aag att gga aaa	1502
Asp Glu Leu Tyr Phe Cys Lys Lys Leu Lys Thr Leu Lys Ile Gly Lys	
463 468 473 478	
aac agc cta tct gta ctt tca ccg aaa att gga aat ttg cta ttt ctt	1550
Asn Ser Leu Ser Val Leu Ser Pro Lys Ile Gly Asn Leu Leu Phe Leu	
479 484 489 494	
tcc tac tta gat gta aaa ggt aat cac ttt gaa atc ctc cct cct gaa	1598
Ser Tyr Leu Asp Val Lys Gly Asn His Phe Glu Ile Leu Pro Pro Glu	
495 500 505 510	
ctg ggt gac tgt cgg gct ctg aag cga gct ggt tta gtt gta gaa gat	1646
Leu Gly Asp Cys Arg Ala Leu Lys Arg Ala Gly Leu Val Val Glu Asp	
511 516 521 526	
gct ctg ttt gaa act ctg cct tct gac gtc cgg gag caa atg aaa aca	1694
Ala Leu Phe Glu Thr Leu Pro Ser Asp Val Arg Glu Gln Met Lys Thr	
527 532 537 542	
gaa taa cttatttttc gttaaagttt gactgaaaca cgcttctacc aaatacagta	1750
Glu *	

543

taaataatta ggtagtctta atgcctttcc tttttttttt tccttttcac acaaaatgta 1810
 cacaaagatc gcgtaaggag tatgtatttt taataaaaat ttaattgtat tttttcaata 1870
 ttaaaaaaaaa aaaa 1884

<210> 956
 <211> 1508
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (476) .. (1378)

<400> 956

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 agaaacgctg gggcgcccac cctggcagac taacgaagca gctcccttcc caccccaact 180
 gcaggtctaa ttttggacgc ttgacctgcc atttcttcca ggttgagggga gccgcagagg 240
 cggaggctcg cgtattcctg cagtcagcac ccacgtcgcc cccggacgct cgggtgctcag 300
 gcccttcgcy agcggggctc tccgtctgcy gtcccttgty aaggctctgg gcggctgcag 360
 aggccggccg tccggtttgg ctcacctctc ccaggaaaact tcacactgga gagccaaaag 420
 gagtggaaga gcctgtcttg gagattttcc tggggaaatc ctgaggtcat tcatt atg 478
 Met
 1

aag tgt acc gcg cgg gag tgg ctc aga gta acc aca gtg ctg ttc atg 526
 Lys Cys Thr Ala Arg Glu Trp Leu Arg Val Thr Thr Val Leu Phe Met
 2 7 12 17

gct aga gca att cca gcc atg gtg gtt ccc aat gcc act tta ttg gag 574
 Ala Arg Ala Ile Pro Ala Met Val Val Pro Asn Ala Thr Leu Leu Glu
 18 23 28 33

aaa ctt ttg gaa aaa tac atg gat gag gat ggt gag tgg tgg ata gcc 622
 Lys Leu Leu Glu Lys Tyr Met Asp Glu Asp Gly Glu Trp Trp Ile Ala
 34 39 44 49

aaa caa cga ggg aaa agg gcc atc aca gac aat gac atg cag agt att 670
 Lys Gln Arg Gly Lys Arg Ala Ile Thr Asp Asn Asp Met Gln Ser Ile
 50 55 60 65

ttg gac ctt cat aat aaa tta cga agt cag gtg tat cca aca gcc tct 718
 Leu Asp Leu His Asn Lys Leu Arg Ser Gln Val Tyr Pro Thr Ala Ser

66	71	76	81	
aat atg gag tat atg aca tgg gat gta gag ctg gaa aga tct gca gaa				766
Asn Met Glu Tyr Met Thr Trp Asp Val Glu Leu Glu Arg Ser Ala Glu				
82	87	92	97	
tcc tgg gct gaa agt tgc ttg tgg gaa cat gga cct gca agc ttg ctt				814
Ser Trp Ala Glu Ser Cys Leu Trp Glu His Gly Pro Ala Ser Leu Leu				
98	103	108	113	
cca tca att gga cag aat ttg gga gca cac tgg gga aga tat agg ccc				862
Pro Ser Ile Gly Gln Asn Leu Gly Ala His Trp Gly Arg Tyr Arg Pro				
114	119	124	129	
ccg acg ttt cat gta caa tcg tgg tat gat gaa gtg aaa gac ttt agc				910
Pro Thr Phe His Val Gln Ser Trp Tyr Asp Glu Val Lys Asp Phe Ser				
130	135	140	145	
tac cca tat gaa cat gaa tgc aac cca tat tgt cca ttc agg tgt tct				958
Tyr Pro Tyr Glu His Glu Cys Asn Pro Tyr Cys Pro Phe Arg Cys Ser				
146	151	156	161	
ggc cct gta tgt aca cat tat aca cag gtc gtg tgg gca act agt aac				1006
Gly Pro Val Cys Thr His Tyr Thr Gln Val Val Trp Ala Thr Ser Asn				
162	167	172	177	
aga atc ggt tgt gcc att aat ttg tgt cat aac atg aac atc tgg ggg				1054
Arg Ile Gly Cys Ala Ile Asn Leu Cys His Asn Met Asn Ile Trp Gly				
178	183	188	193	
cag ata tgg ccc aaa gct gtc tac ctg gtg tgc aat tac tcc cca aag				1102
Gln Ile Trp Pro Lys Ala Val Tyr Leu Val Cys Asn Tyr Ser Pro Lys				
194	199	204	209	
gga aac tgg tgg ggc cat gcc cct tac aaa cat ggg cgg ccc tgt tct				1150
Gly Asn Trp Trp Gly His Ala Pro Tyr Lys His Gly Arg Pro Cys Ser				
210	215	220	225	
gct tgc cca cct agt ttt gga ggg ggc tgt aga gaa aat ctg tgc tac				1198
Ala Cys Pro Pro Ser Phe Gly Gly Gly Cys Arg Glu Asn Leu Cys Tyr				
226	231	236	241	
aaa gaa ggg tca gac agg tat tat ccc cct cga gaa gag gaa aca aat				1246
Lys Glu Gly Ser Asp Arg Tyr Tyr Pro Pro Arg Glu Glu Glu Thr Asn				
242	247	252	257	
gaa ata gaa cga cag cag tca caa gtc cat gac acc cat gtc cgg aca				1294
Glu Ile Glu Arg Gln Gln Ser Gln Val His Asp Thr His Val Arg Thr				
258	263	268	273	
aga tca gat gat agt agc aga aat gaa gtc att agc ttt ggg aaa agt				1342
Arg Ser Asp Asp Ser Ser Arg Asn Glu Val Ile Ser Phe Gly Lys Ser				
274	279	284	289	
aat gaa aat ata atg gtt tta gaa atc ctg tgt taa atat tgctatatatt				1392
Asn Glu Asn Ile Met Val Leu Glu Ile Leu Cys *				
290	295	300		

Glu Ala Arg Tyr Tyr	Leu Val Gln Gly Leu	Ile Glu Asp Cys Gln Leu	
120	125	130	135
gcg ctg cag caa aaa agg gag acg ctg tcc ccg ctg tgc ctc atc ccc			665
Ala Leu Gln Gln Lys Arg Glu Thr Leu Ser Pro Leu Cys Leu Ile Pro			
136	141	146	151
atg gtg aca tct ccc cgg gag gag cag cag ctc ctg gcc agc acc tcc			713
Met Val Thr Ser Pro Arg Glu Glu Gln Gln Leu Leu Ala Ser Thr Ser			
152	157	162	167
aag ccc gtg gtg aag ctc ctg cac aac cgc agt aac aac aag tac tcc			761
Lys Pro Val Val Lys Leu Leu His Asn Arg Ser Asn Asn Lys Tyr Ser			
168	173	178	183
tac acc agc act tca gat gac aac cta ctt aag aac atc gag ctg ttc			809
Tyr Thr Ser Thr Ser Asp Asp Asn Leu Leu Lys Asn Ile Glu Leu Phe			
184	189	194	199
gac aag ctg gcc ctg cgc ttc cac ggg cgg cta ctc ttc ctc aag gat			857
Asp Lys Leu Ala Leu Arg Phe His Gly Arg Leu Leu Phe Leu Lys Asp			
200	205	210	215
gtc ctg ggg gac gag atc tgc tgc tgg tct ttc tac ggg cag ggc cgc			905
Val Leu Gly Asp Glu Ile Cys Cys Trp Ser Phe Tyr Gly Gln Gly Arg			
216	221	226	231
aaa atc gcc gag gtg tgc tgc acc tcc att gtc tat gct acg gag aag			953
Lys Ile Ala Glu Val Cys Cys Thr Ser Ile Val Tyr Ala Thr Glu Lys			
232	237	242	247
aag cag acc aag gtg gaa ttt cca gag gcc cgg atc ttc gag gag acc			1001
Lys Gln Thr Lys Val Glu Phe Pro Glu Ala Arg Ile Phe Glu Glu Thr			
248	253	258	263
ctg aac atc ctc atc tac gag act ccc cgg ggc cca gac cca gcc ctc			1049
Leu Asn Ile Leu Ile Tyr Glu Thr Pro Arg Gly Pro Asp Pro Ala Leu			
264	269	274	279
ctg gag gcc aca ggg gga gca gct gga gct ggt ggg gct ggc cgc ggg			1097
Leu Glu Ala Thr Gly Gly Ala Ala Gly Ala Gly Gly Ala Gly Arg Gly			
280	285	290	295
gag gat gaa gag aac cga gag cac cgt gtc cgc agg atc cat gtc cgg			1145
Glu Asp Glu Glu Asn Arg Glu His Arg Val Arg Arg Ile His Val Arg			
296	301	306	311
cgc cat atc acc cac gac gag cgt cct cat ggc caa caa att gtc ttc			1193
Arg His Ile Thr His Asp Glu Arg Pro His Gly Gln Gln Ile Val Phe			
312	317	322	327
aag gac tga cctctga ccctccccct gccttctct tgccttgga cccagtcct			1249
Lys Asp *			
328			
ctctctttcc ctccccctcc cagacttttg ccccggtct gctggccaag tcgtgggtcc			1309

tcctctgtcc cttcattgca tggcacagct cactttggcc cttctccacc catcccaacc 1369
 ccattgctaa caacatggta cattccggcc ccaccactca gagccttccg aagccaacac 1429
 ttgtccccac cctggccctg cgctcctccc tctccagctg gttaagaggg atttagaatt 1489
 ccctttctct ttttttagtg catcgtccat gccaaagtgt gcggcccttc ctgacatcac 1549
 cacagtctga gcagcctccc gcgtcctgca gggtagtccg cccctcctc cccaccatcc 1609
 tccctacctc cttaactttg tactagactg gcctgggcct gccagctca gcgttatcag 1669
 tctgtttcat attatttatt attttaattt tctattaaat tattgaaata aagttaagtt 1729
 gagaaaaaaaa aaa 1742

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 tcggatccac tagtccagtg tgggtggaatt cttccattca gttggcttca cttgaagtgg 120
 taaggcagat tatctgtgct gctcaagaac atgtgaagga aaaaagacga agtgcagaag 180
 ttgatgatgg ggctgctgaa aaggaaactc tgccagagtt tggagagggga aaggacaccg 240
 gaggacttgt gcctggaaag tctttgggtc ttgcaacact ggaatttgtgt gtagtcattc 300
 tagttagaca gctcccagaa ttaaacccta aattgacagg tagcccagga gtaaaagcta 360
 cgaagccaca gatactatta gaagatggaa gtagattggc ttcagctgca ttggttatcc 420
 tttccgaact tcctgcagtg tgctctcctg aaggaagcat ctcaattctc cctactatat 480
 tgtacctcac aatcggggtc ctcagagaga ctgctgtgaa gttacctggg ggccagttat 540
 cttcgacagt tgcagcttcc ctacaggctc taaaaggaat attatcttct ccc atg 596
 Met
 1

gcc cgg gca gaa aag agc cgt act gct tgg act gac ctt ctc cga agt 644
 Ala Arg Ala Glu Lys Ser Arg Thr Ala Trp Thr Asp Leu Leu Arg Ser
 2 7 12 17

gcc tta aca aca att ctt gac tgt tgg gat cca gtt gat gaa aca cac 692
 Ala Leu Thr Thr Ile Leu Asp Cys Trp Asp Pro Val Asp Glu Thr His

18	23	28	33	
caa gaa ctt gat gaa gtc agt cta ctt act gct atc aca gtg ttt att				740
Gln Glu Leu Asp Glu Val Ser Leu Leu Thr Ala Ile Thr Val Phe Ile				
34	39	44	49	
ttg tct acc agt cca gaa gta act acc atc cca tgc ctt cag aag cgc				788
Leu Ser Thr Ser Pro Glu Val Thr Thr Ile Pro Cys Leu Gln Lys Arg				
50	55	60	65	
tgt att gat aaa ttt aaa gct act ctt gag ata aaa gat cct gtg gta				836
Cys Ile Asp Lys Phe Lys Ala Thr Leu Glu Ile Lys Asp Pro Val Val				
66	71	76	81	
caa atc aag acc tac cag ctc cta cat tcc atc ttt cag tat cca aat				884
Gln Ile Lys Thr Tyr Gln Leu Leu His Ser Ile Phe Gln Tyr Pro Asn				
82	87	92	97	
cca gct gtt tcc tac cca tac att tac tct tta gca tcc tgt atc atg				932
Pro Ala Val Ser Tyr Pro Tyr Ile Tyr Ser Leu Ala Ser Cys Ile Met				
98	103	108	113	
gaa aaa ctg cag gaa ata gac aag aga aaa cct gaa aac act gct gag				980
Glu Lys Leu Gln Glu Ile Asp Lys Arg Lys Pro Glu Asn Thr Ala Glu				
114	119	124	129	
ctt gag atc ttc caa gaa ggc ata aag gtc tta gaa aca ctg gtt act				1028
Leu Glu Ile Phe Gln Glu Gly Ile Lys Val Leu Glu Thr Leu Val Thr				
130	135	140	145	
gtt gct gaa gaa cac cat cgc gct cag ctg gtg gcc tgt ctt ttg ccc				1076
Val Ala Glu Glu His His Arg Ala Gln Leu Val Ala Cys Leu Leu Pro				
146	151	156	161	
atc ctc att tcc ttc ctt ttg gat gaa aat tct ctg gga tca gca act				1124
Ile Leu Ile Ser Phe Leu Leu Asp Glu Asn Ser Leu Gly Ser Ala Thr				
162	167	172	177	
tcc ata atg aga aat tta cat gac ttt gct cta caa aat ctc atg caa				1172
Ser Ile Met Arg Asn Leu His Asp Phe Ala Leu Gln Asn Leu Met Gln				
178	183	188	193	
att gga cct cag tat tca tct gtt ttt aaa agt tta gtg gct tct tct				1220
Ile Gly Pro Gln Tyr Ser Ser Val Phe Lys Ser Leu Val Ala Ser Ser				
194	199	204	209	
cca gcc cta aaa gcc cgc ctt gag gct gct ata aag gcc aat cag gaa				1268
Pro Ala Leu Lys Ala Arg Leu Glu Ala Ala Ile Lys Gly Asn Gln Glu				
210	215	220	225	
agt gtc aaa gtc aag ata cca aca tct aaa tat act aag agt cct gga				1316
Ser Val Lys Val Lys Ile Pro Thr Ser Lys Tyr Thr Lys Ser Pro Gly				
226	231	236	241	
aaa aac tca agc atc caa tta aag acc agt ttc ctc tga tttttttttt				1365
Lys Asn Ser Ser Ile Gln Leu Lys Thr Ser Phe Leu *				
242	247	252		

ggaatagtaa gcaccttaat ataataaata cttgatcatt gcctttggtg acaaaaggga 1425
cattgtagac acaagtgcc ttagaggctc agttgattgt tttaccttaa atagctgtga 1485
ctcttcaaag taacagcata cttaacatctt ttgtgtgtgt gcgtgggggtt tgtgttttgt 1545
tttgttttgt ttttctatctt aaaaagacaa tggagctaac ttgccaggaa ttttaagaaa 1605
gtgctaaaga actaaactta ctaaacaatc cactgcttta aaaatgaaat gaatttcttc 1665
taacagtcca tacatatgtg gtatacttaa tactgtgaca gatataaata tgactctagt 1725
gtaaattatc tgcactaata ttgtatocca attgctgatt taaaattctg ctttggcccg 1785
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<212> DNA
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<222> (124) .. (699)

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gtg atg ctt ctg gga gac aca ggc gtc ggc aaa aca tgt ttc ctg atc 168
Met Leu Leu Gly Asp Thr Gly Val Gly Lys Thr Cys Phe Leu Ile
1 5 10
caa ttc aaa gac ggg gcc ttc ctg tcc gga acc ttc ata gcc acc gtc 216
Gln Phe Lys Asp Gly Ala Phe Leu Ser Gly Thr Phe Ile Ala Thr Val
16 21 26 31
ggc ata gac ttc agg aac aag gtg gtg act gtg gat ggc gtg aga gtg 264
Gly Ile Asp Phe Arg Asn Lys Val Val Thr Val Asp Gly Val Arg Val
32 37 42 47
aag ctg cag atc tgg gac acc gct ggg cag gaa cgg ttc cga agc gtc 312
Lys Leu Gln Ile Trp Asp Thr Ala Gly Gln Glu Arg Phe Arg Ser Val
48 53 58 63

acc cat gct tat tac aga gat gct cag gcc ttg ctt ctg ctg tat gac	360
Thr His Ala Tyr Tyr Arg Asp Ala Gln Ala Leu Leu Leu Leu Tyr Asp	
64 69 74 79	
atc acc aac aaa tct tct ttc gac aac atc agg gcc tgg ctc act gag	408
Ile Thr Asn Lys Ser Ser Phe Asp Asn Ile Arg Ala Trp Leu Thr Glu	
80 85 90 95	
att cat gag tat gcc cag agg gac gtg gtg atc atg ctg cta ggc aac	456
Ile His Glu Tyr Ala Gln Arg Asp Val Val Ile Met Leu Leu Gly Asn	
96 101 106 111	
aag gcg gat atg agc agc gaa aga gtg atc cgt tcc gaa gac gga gag	504
Lys Ala Asp Met Ser Ser Glu Arg Val Ile Arg Ser Glu Asp Gly Glu	
112 117 122 127	
acc ttg gcc agg gag tac ggt gtt ccc ttc ctg gag acc agc gcc aag	552
Thr Leu Ala Arg Glu Tyr Gly Val Pro Phe Leu Glu Thr Ser Ala Lys	
128 133 138 143	
act ggc atg aat gtg gag tta gcc ttt ctg gcc atc gcc aag gaa ctg	600
Thr Gly Met Asn Val Glu Leu Ala Phe Leu Ala Ile Ala Lys Glu Leu	
144 149 154 159	
aaa tac cgg gcc ggg cat cag gcg gat gag ccc agc ttc cag atc cga	648
Lys Tyr Arg Ala Gly His Gln Ala Asp Glu Pro Ser Phe Gln Ile Arg	
160 165 170 175	
gac tat gta gag tcc cag aag aag cgc tcc agc tgc tgc tcc ttc atg	696
Asp Tyr Val Glu Ser Gln Lys Lys Arg Ser Ser Cys Cys Ser Phe Met	
176 181 186 191	
tga atcc cagggggcag agaggaggct ctggaggcac acaggatgca gccttcccc	753
*	
192	
tcccaggcct ggcttattcc aagaggctga gccaatgggg agaaagatgg aggactcact	813
gcacagccgc ttctagcag ggagctatac tccaactcct acttgagtgc ctgcgggtctc	873
cccgcatcca cagggagggt aaaacactta gcttttattt taatagtaca taatttaata	933
ccaaaaaagg cgcttgatc ccaaaaaaac cgaggctggg agctagtggc ccttttgctt	993
tctaggactt ggggggcccgg ccctccctcc taagcataac aaagggtggg ttgctccagc	1053
tcagccccag gggacacaga tgcactttgg gggtaggggc aggtaatgac tcc	1106

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 <213> Homo sapiens

<220>
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 <222> (1)..(1884)

<400> 960

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Met Ala Ala Glu Lys Gln Val Pro Gly Gly Gly Gly Gly Gly Gly Ser	
1 5 10	
ggc ggc ggc ggt ggc agt ggc ggc ggc ggt agc ggc ggt gga cgt ggt	96
Gly Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Arg Gly	
17 22 27 32	
gcc gga ggg gaa gaa aat aaa gaa aac gaa cgc cct tcg gcc gga tcg	144
Ala Gly Gly Glu Glu Asn Lys Glu Asn Glu Arg Pro Ser Ala Gly Ser	
33 38 43 48	
aag gca aac aaa gaa ttt ggg gat agc ctg agt ttg gag att ctt cag	192
Lys Ala Asn Lys Glu Phe Gly Asp Ser Leu Ser Leu Glu Ile Leu Gln	
49 54 59 64	
att att aag gaa tcc cag cag cag cat ggt tta cgg cat gga gat ttt	240
Ile Ile Lys Glu Ser Gln Gln Gln His Gly Leu Arg His Gly Asp Phe	
65 70 75 80	
cag agg tac agg ggc tac tgt tcc cgt aga caa aga cgt ctt cga aaa	288
Gln Arg Tyr Arg Gly Tyr Cys Ser Arg Arg Gln Arg Arg Leu Arg Lys	
81 86 91 96	
aca ctc aac ttc aag atg ggt aac aga cac aaa ttc aca ggg aag aaa	336
Thr Leu Asn Phe Lys Met Gly Asn Arg His Lys Phe Thr Gly Lys Lys	
97 102 107 112	
gtg act gaa gag ctt ctg acc gat aat aga tac ttg ctt ctg gtt ctg	384
Val Thr Glu Glu Leu Leu Thr Asp Asn Arg Tyr Leu Leu Leu Val Leu	
113 118 123 128	
atg gat gct gaa aga gcc tgg agc tac gcc atg cag ctg aaa cag gaa	432
Met Asp Ala Glu Arg Ala Trp Ser Tyr Ala Met Gln Leu Lys Gln Glu	
129 134 139 144	
gcc aac act gaa ccc cga aaa cgg ttt cac ttg tta tct cgc cta cgc	480
Ala Asn Thr Glu Pro Arg Lys Arg Phe His Leu Leu Ser Arg Leu Arg	
145 150 155 160	
aaa gcc gtg aag cat gca gag gaa ttg gaa cgc ttg tgt gag agc aat	528
Lys Ala Val Lys His Ala Glu Glu Leu Glu Arg Leu Cys Glu Ser Asn	
161 166 171 176	
cgc gtg gat gcc aag acc aaa tta gag gct cag gct tac aca gct tac	576
Arg Val Asp Ala Lys Thr Lys Leu Glu Ala Gln Ala Tyr Thr Ala Tyr	
177 182 187 192	
ctc tca gga atg cta cgt ttt gaa cat caa gaa tgg aaa gct gcc att	624
Leu Ser Gly Met Leu Arg Phe Glu His Gln Glu Trp Lys Ala Ala Ile	
193 198 203 208	

gag gct ttt aac aaa tgc aaa act atc tat	gag aag cta gcc agt gct	672
Glu Ala Phe Asn Lys Cys Lys Thr Ile Tyr	Glu Lys Leu Ala Ser Ala	
209	214 219 224	
ttc aca gag gag cag gct gtg ctg tat aac caa cgt gtg gaa gag att	720	
Phe Thr Glu Glu Gln Ala Val Leu Tyr Asn Gln Arg Val Glu Glu Ile		
225	230 235 240	
tca ccc aac atc cgc tat tgt gca tat aat att ggg gac cag tca gcc	768	
Ser Pro Asn Ile Arg Tyr Cys Ala Tyr Asn Ile Gly Asp Gln Ser Ala		
241	246 251 256	
atc aat gaa ctc atg cag atg aga ttg agg tct ggg ggc act gag ggt	816	
Ile Asn Glu Leu Met Gln Met Arg Leu Arg Ser Gly Gly Thr Glu Gly		
257	262 267 272	
ctc ttg gct gaa aaa ttg gag gct ttg atc act cag act cga gcc aaa	864	
Leu Leu Ala Glu Lys Leu Glu Ala Leu Ile Thr Gln Thr Arg Ala Lys		
273	278 283 288	
cag gca gct acc atg agt gaa gtg gag tgg aga ggg aga acg gtt cca	912	
Gln Ala Ala Thr Met Ser Glu Val Glu Trp Arg Gly Arg Thr Val Pro		
289	294 299 304	
gtg aag att gac aaa gtg cgc att ttc tta tta gga ctg gct gat aac	960	
Val Lys Ile Asp Lys Val Arg Ile Phe Leu Leu Gly Leu Ala Asp Asn		
305	310 315 320	
gaa gca gct att gtc cag gct gaa agc gaa gaa act aag gag cgc ctg	1008	
Glu Ala Ala Ile Val Gln Ala Glu Ser Glu Glu Thr Lys Glu Arg Leu		
321	326 331 336	
ttt gaa tca atg ctc agc gag tgt cgg gac gcc atc cag gtg gtt cgg	1056	
Phe Glu Ser Met Leu Ser Glu Cys Arg Asp Ala Ile Gln Val Val Arg		
337	342 347 352	
gag gag ctc aag cca gat cag aaa cag aga gat tat atc ctt gaa gga	1104	
Glu Glu Leu Lys Pro Asp Gln Lys Gln Arg Asp Tyr Ile Leu Glu Gly		
353	358 363 368	
gag cca ggg aag gtg tct aat ctt caa tac ttg cat agc tac ctg act	1152	
Glu Pro Gly Lys Val Ser Asn Leu Gln Tyr Leu His Ser Tyr Leu Thr		
369	374 379 384	
tac atc aag cta tca acg gca atc aag cgt aat gag aac atg gcc aaa	1200	
Tyr Ile Lys Leu Ser Thr Ala Ile Lys Arg Asn Glu Asn Met Ala Lys		
385	390 395 400	
ggt ctg cag agg gct ctg ctg cag cag cag cca gag gat gac agc aag	1248	
Gly Leu Gln Arg Ala Leu Leu Gln Gln Gln Pro Glu Asp Asp Ser Lys		
401	406 411 416	
cgc tca ccc cgg ccc cag gac ctg atc cga ctc tat gac atc atc tta	1296	
Arg Ser Pro Arg Pro Gln Asp Leu Ile Arg Leu Tyr Asp Ile Ile Leu		
417	422 427 432	
cag aat ctg gtg gaa ttg ctc cag ctt cct ggt tta gag gaa gac aaa	1344	

Gln Asn Leu Val Glu Leu Leu Gln Leu Pro Gly Leu Glu Glu Asp Lys	
433 438 443 448	
gcc ttc cag aaa gag ata ggc ctc aag act ctg gtg ttc aaa gct tac	1392
Ala Phe Gln Lys Glu Ile Gly Leu Lys Thr Leu Val Phe Lys Ala Tyr	
449 454 459 464	
agg tgt ttt ttc att gct cag tcc tat gtg ctg gtg aag aag tgg agc	1440
Arg Cys Phe Phe Ile Ala Gln Ser Tyr Val Leu Val Lys Lys Trp Ser	
465 470 475 480	
gaa gcc ctt gtc ctg tat gac aga gtc ctg aaa tat gca aat gaa gta	1488
Glu Ala Leu Val Leu Tyr Asp Arg Val Leu Lys Tyr Ala Asn Glu Val	
481 486 491 496	
aat tct gat gct ggc gcc ttc aag aac agc cta aag gac ctg cct gat	1536
Asn Ser Asp Ala Gly Ala Phe Lys Asn Ser Leu Lys Asp Leu Pro Asp	
497 502 507 512	
gtg caa gag ctc atc act caa gtg cgg tca gag aag tgc tcc ctg cag	1584
Val Gln Glu Leu Ile Thr Gln Val Arg Ser Glu Lys Cys Ser Leu Gln	
513 518 523 528	
gcc gca gcc atc ctt gat gca aac gac gct cat caa aca gag acc tcc	1632
Ala Ala Ala Ile Leu Asp Ala Asn Asp Ala His Gln Thr Glu Thr Ser	
529 534 539 544	
tcc tcc caa gtc aag gac aat aag cct ctg gtt gaa cgg ttt gag aca	1680
Ser Ser Gln Val Lys Asp Asn Lys Pro Leu Val Glu Arg Phe Glu Thr	
545 550 555 560	
ttc tgc ctg gac cct tcc ctt gtc acc aag caa gcc aac ctt gtg cac	1728
Phe Cys Leu Asp Pro Ser Leu Val Thr Lys Gln Ala Asn Leu Val His	
561 566 571 576	
ttc cca cca ggc ttc cag ccc att ccc tgc aag cct ttg ttc ttt gac	1776
Phe Pro Pro Gly Phe Gln Pro Ile Pro Cys Lys Pro Leu Phe Phe Asp	
577 582 587 592	
ctg gcc ctc aac cat gtg gct ttc cca ccc ctt gag gac aag ttg gaa	1824
Leu Ala Leu Asn His Val Ala Phe Pro Pro Leu Glu Asp Lys Leu Glu	
593 598 603 608	
cag aag acc aag agt ggc ctc act gga tac atc aag ggc atc ttt gga	1872
Gln Lys Thr Lys Ser Gly Leu Thr Gly Tyr Ile Lys Gly Ile Phe Gly	
609 614 619 624	
ttc agg agc taa cca ggctcttcct cggggggcggg ggagattctg actcttaac	1927
Phe Arg Ser *	
625	
tgtattgtga gaaaatccca gcaagttcca tgatattaaa tcca	1971

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 <222> (101)..(1282)

<400> 961

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gcagctgagc gtgattcccc ggtcgacgat ttcgtggaag  atg gac gca gct act      115
                                         Met Asp Ala Ala Thr
                                         1

ctg acc tac gac act ctc cgg ttt gct gag ttt gaa gat ttt cct gag      163
Leu Thr Tyr Asp Thr Leu Arg Phe Ala Glu Phe Glu Asp Phe Pro Glu
   6                      11                      16                      21

acc tca gag ccc gtt tgg ata ctg ggt aga aaa tac agc att ttc aca      211
Thr Ser Glu Pro Val Trp Ile Leu Gly Arg Lys Tyr Ser Ile Phe Thr
  22                      27                      32                      37

gaa aag gac gag atc ttg tct gat gtg gca tct aga ctt tgg ttt aca      259
Glu Lys Asp Glu Ile Leu Ser Asp Val Ala Ser Arg Leu Trp Phe Thr
  38                      43                      48                      53

tac agg aaa aac ttt cca gcc att ggg ggg aca ggc ccc acc tcg gac      307
Tyr Arg Lys Asn Phe Pro Ala Ile Gly Gly Thr Gly Pro Thr Ser Asp
  54                      59                      64                      69

aca ggc tgg ggc tgc atg ctg cgg tgt gga cag atg atc ttt gcc caa      355
Thr Gly Trp Gly Cys Met Leu Arg Cys Gly Gln Met Ile Phe Ala Gln
  70                      75                      80                      85

gcc ctg gtg tgc cgg cac cta ggc cga gat tgg agg tgg aca caa agg      403
Ala Leu Val Cys Arg His Leu Gly Arg Asp Trp Arg Trp Thr Gln Arg
  86                      91                      96                      101

aag agg cag cca gac agc tac ttc agc gtc ctc aac gca ttc atc gac      451
Lys Arg Gln Pro Asp Ser Tyr Phe Ser Val Leu Asn Ala Phe Ile Asp
 102                      107                      112                      117

agg aag gac agt tac tac tcc att cac cag ata gcg caa atg gga gtt      499
Arg Lys Asp Ser Tyr Tyr Ser Ile His Gln Ile Ala Gln Met Gly Val
 118                      123                      128                      133

ggc gaa ggc aag tcc ata ggc cag tgg tac ggg ccc aac act gtc gcc      547
Gly Glu Gly Lys Ser Ile Gly Gln Trp Tyr Gly Pro Asn Thr Val Ala
 134                      139                      144                      149

cag gtc ctg aag aag ctt gct gtc ttc gat acg tgg agc tcc ttg gcg      595
Gln Val Leu Lys Lys Leu Ala Val Phe Asp Thr Trp Ser Ser Leu Ala
 150                      155                      160                      165

gtc cac att gca atg gac aac act gtt gtg atg gag gaa atc aga agg      643
Val His Ile Ala Met Asp Asn Thr Val Val Met Glu Glu Ile Arg Arg

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166	171	176	181	
ttg tgc agg acc agc gtt ccc tgt gca ggc gcc act gcg ttt cct gca				691
Leu Cys Arg Thr Ser Val Pro Cys Ala Gly Ala Thr Ala Phe Pro Ala				
182	187	192	197	
gat tcc gac cgg cac tgc aac gga ttc cct gcc gga gct gag gtc acc				739
Asp Ser Asp Arg His Cys Asn Gly Phe Pro Ala Gly Ala Glu Val Thr				
198	203	208	213	
aac agg ccg tcg cca tgg aga ccc ctg gta ctt ctc att ccc ctg cgc				787
Asn Arg Pro Ser Pro Trp Arg Pro Leu Val Leu Leu Ile Pro Leu Arg				
214	219	224	229	
ctg ggg ctc acg gac atc aac gag gcc tac gtg gag acg ctg aag cac				835
Leu Gly Leu Thr Asp Ile Asn Glu Ala Tyr Val Glu Thr Leu Lys His				
230	235	240	245	
tgc ttc atg atg ccc cag tcc ctg ggc gtc atc gga ggg aag ccc aac				883
Cys Phe Met Met Pro Gln Ser Leu Gly Val Ile Gly Gly Lys Pro Asn				
246	251	256	261	
agc gcc cac tac ttc atc ggc tac gtt ggt gag gag ctc atc tac ctg				931
Ser Ala His Tyr Phe Ile Gly Tyr Val Gly Glu Glu Leu Ile Tyr Leu				
262	267	272	277	
gac ccc cac acc acg cag cca gcc gtg gag ccc act gat ggc tgc ttc				979
Asp Pro His Thr Thr Gln Pro Ala Val Glu Pro Thr Asp Gly Cys Phe				
278	283	288	293	
atc ccg gac gag agc ttc cac tgc cag cac ccg ccg tgc cgc atg agc				1027
Ile Pro Asp Glu Ser Phe His Cys Gln His Pro Pro Cys Arg Met Ser				
294	299	304	309	
atc gcg gag ctt gac ccg tcc atc gct gtg ggg ttt ttc tgt aag act				1075
Ile Ala Glu Leu Asp Pro Ser Ile Ala Val Gly Phe Phe Cys Lys Thr				
310	315	320	325	
gaa gat gac ttc aat gat tgg tgc cag caa gtc aaa aag ctg tct ctg				1123
Glu Asp Asp Phe Asn Asp Trp Cys Gln Gln Val Lys Lys Leu Ser Leu				
326	331	336	341	
ctt gga ggt gcc ctg ccc atg ttt gag ctg gtg gag cag cag cct tca				1171
Leu Gly Gly Ala Leu Pro Met Phe Glu Leu Val Glu Gln Gln Pro Ser				
342	347	352	357	
cat ctg gcc tgc ccc gac gtc ctg aac ctg tcc cta gat tct tct gat				1219
His Leu Ala Cys Pro Asp Val Leu Asn Leu Ser Leu Asp Ser Ser Asp				
358	363	368	373	
gta gag cga ctg gaa aga ttc ttc gac tca gaa gat gaa gac ttt gaa				1267
Val Glu Arg Leu Glu Arg Phe Phe Asp Ser Glu Asp Glu Asp Phe Glu				
374	379	384	389	
atc ctg tcc ctt tga aaatcctggg gtcgggggtg gcacctgtga gagcctgggg				1322
Ile Leu Ser Leu *				
390				

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tgctgcctcc ccccagaggg ccaccgctg tgctcgtgga ctgaggctgc gctgccccgg 1442
aggccttact gcttggtgtc agactgcccc gctcagagt cccgtcaggg cctgtgcatc 1502
cgcacgcgga gccgtctgtt aggagcttcc agagcgttct ctgacactg ccagccccgt 1562
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<210> 962
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<213> Homo sapiens

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<222> (67)..(444)

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ggcgct atg ccg ggg cgg cac gtt tct cga gtc cgg gca ttg tac aag 108
Met Pro Gly Arg His Val Ser Arg Val Arg Ala Leu Tyr Lys
1 5 10
cgc gtc ttg cag ctg cac cgt gtt ctg ccc ccg gac ctc aaa tcc ctg 156
Arg Val Leu Gln Leu His Arg Val Leu Pro Pro Asp Leu Lys Ser Leu
15 20 25 30
ggc gac cag tac gtg aaa gac gaa ttt agg aga cat aag acc gtt ggt 204
Gly Asp Gln Tyr Val Lys Asp Glu Phe Arg Arg His Lys Thr Val Gly
31 36 41 46
tct gac gag gca cag cgt ttc ttg caa gaa tgg gag gtg tat gca aca 252
Ser Asp Glu Ala Gln Arg Phe Leu Gln Glu Trp Glu Val Tyr Ala Thr
47 52 57 62
gcg tta ttg caa cag gct aac gaa aac aga caa aat tca act gga aaa 300
Ala Leu Leu Gln Gln Ala Asn Glu Asn Arg Gln Asn Ser Thr Gly Lys
63 68 73 78
gca tgt ttt ggc acc ttc ctc cca gaa gaa aaa ctt aat gac ttt cgt 348
Ala Cys Phe Gly Thr Phe Leu Pro Glu Glu Lys Leu Asn Asp Phe Arg
79 84 89 94
gat gaa caa att gga cag ttg cag gag ctg atg caa gaa gcc aca aaa 396
Asp Glu Gln Ile Gly Gln Leu Gln Glu Leu Met Gln Glu Ala Thr Lys
95 100 105 110
ccc aat agg caa ttt agt att tct gag tct atg aaa cca aaa ttt tag 444

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[illegible][illegible]

11. *Chrysomelids* (11 species)

tca aac cct atg gac tac gcc tgg ggg gcc aac ggc ctg gat gcc atc	567
Ser Asn Pro Met Asp Tyr Ala Trp Gly Ala Asn Gly Leu Asp Ala Ile	
107 112 117 122	
atc aca cag ctc ctc aat cag ttt gaa aac aca ggc ccc cca ccg gca	615
Ile Thr Gln Leu Leu Asn Gln Phe Glu Asn Thr Gly Pro Pro Pro Ala	
123 128 133 138	
gat aaa gag aaa atc cag gcc ctc ccc acc gtc ccc gtc act gag gag	663
Asp Lys Glu Lys Ile Gln Ala Leu Pro Thr Val Pro Val Thr Glu Glu	
139 144 149 154	
cac gta ggc tcc ggg ctc gag tgc cct gtg tgc aag gac gac tac gcg	711
His Val Gly Ser Gly Leu Glu Cys Pro Val Cys Lys Asp Asp Tyr Ala	
155 160 165 170	
ctg ggt gag cgt gtg cgg cag ctg ccc tgc aac cac ctg ttc cac gac	759
Leu Gly Glu Arg Val Arg Gln Leu Pro Cys Asn His Leu Phe His Asp	
171 176 181 186	
ggc tgc atc gtg ccc tgg ctg gag cag cac gac agc tgc ccc gtc tgc	807
Gly Cys Ile Val Pro Trp Leu Glu Gln His Asp Ser Cys Pro Val Cys	
187 192 197 202	
cga aaa agc ctc acg gga cag aac acg gcc aca aac ccc cct ggc ctc	855
Arg Lys Ser Leu Thr Gly Gln Asn Thr Ala Thr Asn Pro Pro Gly Leu	
203 208 213 218	
act ggg gtg agc ttc tcc tcc tcg tcg tca tcg tcc tcc tcc agc tcg	903
Thr Gly Val Ser Phe Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser	
219 224 229 234	
ccc agc aac gag aac gcc aca agc aac tcg tga gcccacgt cggccgtcgg	954
Pro Ser Asn Glu Asn Ala Thr Ser Asn Ser *	
235 240 245	
gaaagcacgg ggcctttccc acccaacctc agccagcgcc acacggcacc cacagactgg	1014
gtgccccggc ggcgccacgc ttggtgtgtc agcgtgcag gtcccgctg ttccagggca	1074
ggacccgggc cgggccacc ggccccctgg cttgggaagg cgtgggccac atggtcccct	1134
ctggggcgtc ccagcctcc cgtcctctg tctaacctca ccctctaac gttcagcggc	1194
ggaaagatct ttataatctt aaattattac tgctttgaaa taaacggacg tttgagctca	1254
cgtggcggcc atgcatggtt tgtggcgga gacggggccc agcggctccc ccagcgtga	1314
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ccccagctc cccctcggcc gcctccacga cccggagtag gggggctcgg gaccatgagg	1434
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gtgtatcttg aaagctatctt aaaatacaact acttacaag agaaaaaaaa aaaa	1548

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<400> 966

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gcgctcgctc acccgctccc gaggaagggc agtggggcccc gccgccgcct ccca  atg      117
                                     Met
                                     1

gcg agg ctg cgg gat tgc ctg ccc cgc ctg atg ctc acg ctc cgg tcc      165
Ala Arg Leu Arg Asp Cys Leu Pro Arg Leu Met Leu Thr Leu Arg Ser
   2                               7                               12                               17

ctg ctc ttc tgg tcc ctg gtc tac tgc tac tgc ggg ctc tgc gcc tcc      213
Leu Leu Phe Trp Ser Leu Val Tyr Cys Tyr Cys Gly Leu Cys Ala Ser
  18                               23                               28                               33

atc cac ctg ctc aaa ctt ttg tgg agc ctc ggc aag ggg ccg gcg cag      261
Ile His Leu Leu Lys Leu Leu Trp Ser Leu Gly Lys Gly Pro Ala Gln
  34                               39                               44                               49

acc ttc cgg cgg ccc gcc cgg gag cac cct ccc gcg tgc ctg agc gac      309
Thr Phe Arg Arg Pro Ala Arg Glu His Pro Pro Ala Cys Leu Ser Asp
  50                               55                               60                               65

ccc tcc ttg ggc acc cac tgc tac gtg cgg atc aag gat tca ggg tta      357
Pro Ser Leu Gly Thr His Cys Tyr Val Arg Ile Lys Asp Ser Gly Leu
  66                               71                               76                               81

aga ttt cac tat gtt gct gct gga gaa aga ggc aaa cca ctt atg ctg      405
Arg Phe His Tyr Val Ala Ala Gly Glu Arg Gly Lys Pro Leu Met Leu
  82                               87                               92                               97

ctg ctt cat gga ttt cca gaa ttc tgg tat tct tgg cgt tac caa ctg      453
Leu Leu His Gly Phe Pro Glu Phe Trp Tyr Ser Trp Arg Tyr Gln Leu
  98                               103                               108                               113

aga gaa ttt aaa agt gaa tat cga gtt gta gca ctg gat ttg aga ggt      501
Arg Glu Phe Lys Ser Glu Tyr Arg Val Val Ala Leu Asp Leu Arg Gly
 114                               119                               124                               129

tat gga gaa aca gat gct ccc att cat cga cag aat tat aaa ttg gat      549
Tyr Gly Glu Thr Asp Ala Pro Ile His Arg Gln Asn Tyr Lys Leu Asp
 130                               135                               140                               145

tgt cta att aca gat ata aag gat att tta gat tct tta ggg tat agc      597
Cys Leu Ile Thr Asp Ile Lys Asp Ile Leu Asp Ser Leu Gly Tyr Ser
 146                               151                               156                               161
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aaa tgt gtt ctt att ggc cat gac tgg ggg ggc atg att gct tgg cta	645
Lys Cys Val Leu Ile Gly His Asp Trp Gly Gly Met Ile Ala Trp Leu	
162 167 172 177	
att gcc atc tgt tat cct gaa atg gtg atg aag ctt att gtt att aac	693
Ile Ala Ile Cys Tyr Pro Glu Met Val Met Lys Leu Ile Val Ile Asn	
178 183 188 193	
ttc cct cat cca aat gta ttt aca gaa tat att tta cga cac cct gct	741
Phe Pro His Pro Asn Val Phe Thr Glu Tyr Ile Leu Arg His Pro Ala	
194 199 204 209	
cag ctg ttg aaa tcc agt tat tat tac ttc ttc caa ata cca tgg ttc	789
Gln Leu Leu Lys Ser Ser Tyr Tyr Tyr Phe Phe Gln Ile Pro Trp Phe	
210 215 220 225	
cca gaa ttt atg ttc tca ata aat gat ttc aag gtt ttg aaa cat ctg	837
Pro Glu Phe Met Phe Ser Ile Asn Asp Phe Lys Val Leu Lys His Leu	
226 231 236 241	
ttt acc agt cac agc act ggc att gga aga aaa gga tgc caa tta aca	885
Phe Thr Ser His Ser Thr Gly Ile Gly Arg Lys Gly Cys Gln Leu Thr	
242 247 252 257	
aca gag gat ctt gaa gct tat att tat gtc ttt tct cag cct gga gca	933
Thr Glu Asp Leu Glu Ala Tyr Ile Tyr Val Phe Ser Gln Pro Gly Ala	
258 263 268 273	
tta agt ggc cca att aac cat tac cga aat atc ttc agc tgc ctg cct	981
Leu Ser Gly Pro Ile Asn His Tyr Arg Asn Ile Phe Ser Cys Leu Pro	
274 279 284 289	
ctc aaa cat cac atg gtg acc act cca aca cta cta ctg tgg gga gag	1029
Leu Lys His His Met Val Thr Thr Pro Thr Leu Leu Leu Trp Gly Glu	
290 295 300 305	
aat gac gca ttc atg gag gtt gag atg gct gaa gtc aca aag att tat	1077
Asn Asp Ala Phe Met Glu Val Glu Met Ala Glu Val Thr Lys Ile Tyr	
306 311 316 321	
gtt aaa aac tat ttc agg cta act att ttg tca gaa gcc agt cat tgg	1125
Val Lys Asn Tyr Phe Arg Leu Thr Ile Leu Ser Glu Ala Ser His Trp	
322 327 332 337	
ctt cag caa gac caa cct gac ata gtg aac aaa ttg ata tgg aca ttt	1173
Leu Gln Gln Asp Gln Pro Asp Ile Val Asn Lys Leu Ile Trp Thr Phe	
338 343 348 353	
cta aaa gaa gaa aca aga aaa aaa gat tga c ttttctttat cttctatgaa	1224
Leu Lys Glu Glu Thr Arg Lys Lys Asp *	
354 359	
gggtctgtaa tgaaatctct aaataatttt taaaaattgt tcatcaactt ctttatgttt	1284
tattagaaaa aaactgtttt aatgtgcttt atcataaata aatatcctga caaatgggtat	1344

tgaaaaaaat ctgagatcat gtgaacatat aatacaatgt tgattttctt ctggtgtatt 1404
 ttgcacagac aagcatctgc cttaaaatat atacacttgt acaaaaagga agtttgaggt 1464
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 Arg Ala Trp Arg Leu Pro Arg Glu Gly Leu Gly Pro His Gly Pro Ser
 6 11 16 21
 ttc gcg agg gtg cct gtc gca ccc agc agc agc agc ggc ggc cga ggg 151
 Phe Ala Arg Val Pro Val Ala Pro Ser Ser Ser Ser Gly Gly Arg Gly
 22 27 32 37
 ggc gcc gag ccg agg ccg ctt ccg ctt tcc tac agg ctt ctg gac ggg 199
 Gly Ala Glu Pro Arg Pro Leu Pro Leu Ser Tyr Arg Leu Leu Asp Gly
 38 43 48 53
 gag gca gcc ctc ccg gcc gtc gtc ttt ttg cac ggc ctc ttc ggc agc 247
 Glu Ala Ala Leu Pro Ala Val Val Phe Leu His Gly Leu Phe Gly Ser
 54 59 64 69
 aaa act aac ttc aac tcc atc gcc aag atc ttg gcc cag cag aca ggc 295
 Lys Thr Asn Phe Asn Ser Ile Ala Lys Ile Leu Ala Gln Gln Thr Gly
 70 75 80 85
 cgt agg gtg ctg acg gtg gat gct cgt aac cac ggt gac agc ccc cac 343
 Arg Arg Val Leu Thr Val Asp Ala Arg Asn His Gly Asp Ser Pro His
 86 91 96 101
 agc cca gac atg agc tac gag atc atg agc cag gac ctg cag gac ctt 391
 Ser Pro Asp Met Ser Tyr Glu Ile Met Ser Gln Asp Leu Gln Asp Leu
 102 107 112 117
 ctg ccc cag ctg ggc ctg gtg ccc tgc gtc gtc gtt ggc cac agc atg 439
 Leu Pro Gln Leu Gly Leu Val Pro Cys Val Val Val Gly His Ser Met
 118 123 128 133

gga gga aag aca gcc atg ctg ctg gca cta cag agg cca gag ctg gtg	487
Gly Gly Lys Thr Ala Met Leu Leu Ala Leu Gln Arg Pro Glu Leu Val	
134 139 144 149	
gaa cgt ctc att gct gta gat atc agc cca gtg gaa agc aca ggt gtc	535
Glu Arg Leu Ile Ala Val Asp Ile Ser Pro Val Glu Ser Thr Gly Val	
150 155 160 165	
tcc cac ttt gca acc tac gtg gca gcc atg agg gcc atc aac atc gca	583
Ser His Phe Ala Thr Tyr Val Ala Ala Met Arg Ala Ile Asn Ile Ala	
166 171 176 181	
gat gag ctg ccc cgc tcc cgt gcc cga aaa ctg gcg gat gaa cag ctc	631
Asp Glu Leu Pro Arg Ser Arg Ala Arg Lys Leu Ala Asp Glu Gln Leu	
182 187 192 197	
agt tct gtc atc cag gac atg gcc gtg cgg cag cac ctg ctc act aac	679
Ser Ser Val Ile Gln Asp Met Ala Val Arg Gln His Leu Leu Thr Asn	
198 203 208 213	
ctg gta gag gta gac ggg cgc ttc gtg tgg agg gtg aac ttg gat gcc	727
Leu Val Glu Val Asp Gly Arg Phe Val Trp Arg Val Asn Leu Asp Ala	
214 219 224 229	
ctg acc cag cac cta gac aag atc ttg gct ttc cca cag agg cag gag	775
Leu Thr Gln His Leu Asp Lys Ile Leu Ala Phe Pro Gln Arg Gln Glu	
230 235 240 245	
tcc tac ctc ggg cca aca ctc ttt ctc ctt ggt gga aac tcc cag ttc	823
Ser Tyr Leu Gly Pro Thr Leu Phe Leu Leu Gly Gly Asn Ser Gln Phe	
246 251 256 261	
gtg cat ccc agc cac cac cct gag att atg cgg ctc ttc cct cgg gcc	871
Val His Pro Ser His His Pro Glu Ile Met Arg Leu Phe Pro Arg Ala	
262 267 272 277	
cag atg cag acg gtg ccg aac gct ggc cac tgg atc cac gct gac cgc	919
Gln Met Gln Thr Val Pro Asn Ala Gly His Trp Ile His Ala Asp Arg	
278 283 288 293	
cca cag gac ttc ata gct gcc atc cga ggc ttc ctg gtc taa gagttgc	968
Pro Gln Asp Phe Ile Ala Ala Ile Arg Gly Phe Leu Val *	
294 299 304	
tggcaagaag atggccgggc gtggtggctc atgcctgtaa ttccagcact ttgggaggct	1028
aaggcgggag gatgacttga ggccaggagt tggagaccag cctggccaac atggtgaaac	1088
cctgtctcta ctaaaaatac aaaaattagc ctggcgtggg ggtgcacacc tgtaatccca	1148
gctactctgg aggctgaggc aggagaatca cttgaaccct ggaggcagag gttgcaatga	1208
gccgagatca caccactaca ctccagccta ggcaacagag caagactctg tctcaaaaaa	1268
aaacaaaaca aaaaggaggc acaaaacccc aggccttcaag tctctgcagc ctgctccaca	1328
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agacctcagg ctttaatgaa taaagacact actcccaa

1426

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<222> (736) .. (1014)

<400> 968

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gccgcccttt tttttttttt tttctttttt attatgaaca cctaggcagt gaaaactggt      180
atgttaatac atacatagac acacccaaaa catacaaaaa tactattatt tcaaactact      240
aagaatagga cagttcaatt attttcatgc tatgacttta agagcattac actgaaacaa      300
acaagaagtt aaacgacatt ttttttaata tcccagaaat ataccaaaat atacatctaa      360
gctttggaat tactgaggtt agactaatgc aagtgctggg taatcgtact taatacacga      420
gtctaagggt ctgcaggaaa gaaattatct ttggtatctg catcaggcta atattattaa      480
catttggtt ttgctttggg atagagcttg tgtgacccaa gaaccaagta ccccccctcc      540
ccaaccaact gagattaata agatccatgt aaaaagttcc ttcatttgca atccccccac      600
cccccaagtt aaaaagtcac aggcattctac ctagcacaaa aggttgtgaa gtacaatgca      660
tagttgcaca gtggtgctgc aaaaaggaaa gaaaactaca ataaagagaa atgaaaagct      720
tgataatctt tctgc atg ttt tct cac aaa cag gac agc cac ttc caa gca      771
      Met Phe Ser His Lys Gln Asp Ser His Phe Gln Ala
      1              5              10

ggt cca gta cag gaa aag aaa aaa agg ctc aga agg gca ccg tgg cgt      819
Val Pro Val Gln Glu Lys Lys Lys Arg Leu Arg Arg Ala Pro Trp Arg
  13              18              23              28

gca ttc gcc cag ccc cag agg tta aag cac cca gca gag cag cca atc      867
Ala Phe Ala Gln Pro Gln Arg Leu Lys His Pro Ala Glu Gln Pro Ile
  29              34              39              44

gtg cgc cag tgt ctt caa cgt ccc cca ctc tgt gga gtc ctc ggg cca      915
Val Arg Gln Cys Leu Gln Arg Pro Pro Leu Cys Gly Val Leu Gly Pro
  45              50              55              60

gtc cag cag cag ctc cca ccc tcc cta ggc cct gtg cta agt ccc cat      963

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Val	Gln	Gln	Gln	Leu	Pro	Pro	Ser	Leu	Gly	Pro	Val	Leu	Ser	Pro	His	
61					66					71					76	
agt	gac	cct	ggt	tgg	tgt	agg	gtg	gat	gat	ggt	ggt	gat	ggg	gtt	ttt	1011
Ser	Asp	Pro	Gly	Trp	Cys	Arg	Val	Asp	Asp	Gly	Gly	Asp	Gly	Val	Phe	
77					82					87					92	
tga	cttt	tg	tttt	ggaa	aat	ctg	aaat	gcca	attt	gt	ttc	agg	gcat	gct	caca	1068
*																
93																
ttgt	gagggc	caa	agct	tagg	ggc	atgc	cacc	tgt	gct	ggac	cct	gga	aggt	ggta	agc	1128
ttgc	ctgccc	ttt	ctg	atcc	agt	cag	aggg	tcccc	cgcc	cc	ac	cttccc	tgg	cct	cact	1188
cttt	taagt	cc	agg	acacc	ac	ag	actgga	ctg	atg	ctga	ag	acttccc	ttt	ctt	ctcg	1248
tgcc	gaattc	ttg	gcct	cg	ggg	ccaa	aat									1277

<210> 969
 <211> 2144
 <212> DNA
 <213> Homo sapiens

 <220>
 <221> CDS
 <222> (528)..(1607)

<400> 969	
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ctt	gtttcca tgacggcacg tgcgtccttg acaaggctgg atcttacaag tgtgcctgct 180
tgg	caggcta tactgggcag cgctgtgaaa atcttctgga ggctgggaag tccaagatca 240
agg	cgctcaga agattcattg tctgtccttg aagaaagaaa ctgctcagac cctggggggcc 300
cag	tcaatgg gtaccagaaa ataacagggg gccctgggct tatcaacgga cgccatgcta 360
aa	attggcac cgtgggtgtct ttcttttgta acaactccta tggtcttagt ggcaatgaga 420
aa	agaacttg ccagcagaat ggagagtggc cagggaaaca gcccatctgc ataaaagcct 480
g	ccgagaacc aaagatttca gacctgggtga gaaggagagt tcttccg atg cag gtt 536
	Met Gln Val
	1
cag	tca agg gag aca cca tta cac cag cta tac tca gcg gcc ttc agc 584
Gln	Ser Arg Glu Thr Pro Leu His Gln Leu Tyr Ser Ala Ala Phe Ser
4	9 14 19
aag	cag aaa ctg cag agt gcc cct acc aag aag cca gcc ctt ccc ttt 632

Lys	Gln	Lys	Leu	Gln	Ser	Ala	Pro	Thr	Lys	Lys	Pro	Ala	Leu	Pro	Phe	
20					25					30					35	
gga	gat	ctg	ccc	atg	gga	tac	caa	cat	ctg	cat	acc	cag	ctc	cag	tat	680
Gly	Asp	Leu	Pro	Met	Gly	Tyr	Gln	His	Leu	His	Thr	Gln	Leu	Gln	Tyr	
36					41					46					51	
gag	tgc	atc	tca	ccc	ttc	tac	cgc	cgc	ctg	ggc	agc	agc	agg	agg	aca	728
Glu	Cys	Ile	Ser	Pro	Phe	Tyr	Arg	Arg	Leu	Gly	Ser	Ser	Arg	Arg	Thr	
52					57					62					67	
tgt	ctg	agg	act	ggg	aag	tgg	agt	ggg	cgg	gca	cca	tcc	tgc	atc	cct	776
Cys	Leu	Arg	Thr	Gly	Lys	Trp	Ser	Gly	Arg	Ala	Pro	Ser	Cys	Ile	Pro	
68					73					78					83	
atc	tgc	ggg	aaa	att	gag	aac	atc	act	gct	cca	aag	acc	caa	ggg	ttg	824
Ile	Cys	Gly	Lys	Ile	Glu	Asn	Ile	Thr	Ala	Pro	Lys	Thr	Gln	Gly	Leu	
84					89					94					99	
cgc	tgg	cgg	tgg	cag	gca	gcc	atc	tac	agg	agg	acc	agc	ggg	gtg	cat	872
Arg	Trp	Pro	Trp	Gln	Ala	Ala	Ile	Tyr	Arg	Arg	Thr	Ser	Gly	Val	His	
100					105					110					115	
gac	ggc	agc	cta	cac	aag	gga	gcg	tgg	ttc	cta	gtc	tgc	agc	ggg	gcc	920
Asp	Gly	Ser	Leu	His	Lys	Gly	Ala	Trp	Phe	Leu	Val	Cys	Ser	Gly	Ala	
116					121					126					131	
ctg	gtg	aat	gag	cgc	act	gtg	gtg	gtg	gct	gcc	cac	tgt	gtt	act	gac	968
Leu	Val	Asn	Glu	Arg	Thr	Val	Val	Val	Ala	Ala	His	Cys	Val	Thr	Asp	
132					137					142					147	
ctg	ggg	aag	gtc	acc	atg	atc	aag	aca	gca	gac	ctg	aaa	gtt	gtt	ttg	1016
Leu	Gly	Lys	Val	Thr	Met	Ile	Lys	Thr	Ala	Asp	Leu	Lys	Val	Val	Leu	
148					153					158					163	
ggg	aaa	ttc	tac	cgg	gat	gat	gac	cgg	gat	gag	aag	acc	atc	cag	agc	1064
Gly	Lys	Phe	Tyr	Arg	Asp	Asp	Asp	Arg	Asp	Glu	Lys	Thr	Ile	Gln	Ser	
164					169					174					179	
cta	cag	att	tct	gct	atc	att	ctg	cat	ccc	aac	tat	gac	ccc	atc	ctg	1112
Leu	Gln	Ile	Ser	Ala	Ile	Ile	Leu	His	Pro	Asn	Tyr	Asp	Pro	Ile	Leu	
180					185					190					195	
ctt	gat	gct	gac	atc	gcc	atc	ctg	aag	ctc	cta	gac	aag	gcc	cgt	atc	1160
Leu	Asp	Ala	Asp	Ile	Ala	Ile	Leu	Lys	Leu	Leu	Asp	Lys	Ala	Arg	Ile	
196					201					206					211	
agc	acc	cga	gtc	cag	ccc	atc	tgc	ctc	gct	gcc	agt	cgg	gat	ctc	agc	1208
Ser	Thr	Arg	Val	Gln	Pro	Ile	Cys	Leu	Ala	Ala	Ser	Arg	Asp	Leu	Ser	
212					217					222					227	
act	tcc	ttc	cag	gag	tcc	cac	atc	act	gtg	gct	ggc	tgg	aat	gtc	ctg	1256
Thr	Ser	Phe	Gln	Glu	Ser	His	Ile	Thr	Val	Ala	Gly	Trp	Asn	Val	Leu	
228					233					238					243	
gca	gac	gtg	agg	agc	cct	ggc	ttc	aag	aac	gac	aca	ctg	cgc	tct	ggg	1304
Ala	Asp	Val	Arg	Ser	Pro	Gly	Phe	Lys	Asn	Asp	Thr	Leu	Arg	Ser	Gly	

244	249	254	259	
gtg gtc agt gtg gtg gac tcg ctg ctg tgt gag gag cag cat gag gac				1352
Val Val Ser Val Val Asp Ser Leu Leu Cys Glu Glu Gln His Glu Asp				
260	265	270	275	
cat ggc atc cca gtg agt gtc act gat aac atg ttc tgt gcc agc tgg				1400
His Gly Ile Pro Val Ser Val Thr Asp Asn Met Phe Cys Ala Ser Trp				
276	281	286	291	
gaa ccc act gcc cct tct gat atc tgc act gca gag aca gga ggc atc				1448
Glu Pro Thr Ala Pro Ser Asp Ile Cys Thr Ala Glu Thr Gly Gly Ile				
292	297	302	307	
gcg gct gtg tcc ttc ccg gga cga gca tct cct gag cca cgc tgg cat				1496
Ala Ala Val Ser Phe Pro Gly Arg Ala Ser Pro Glu Pro Arg Trp His				
308	313	318	323	
ctg atg gga ctg gtc agc tgg agc tat gat aaa aca tgc agc cac agg				1544
Leu Met Gly Leu Val Ser Trp Ser Tyr Asp Lys Thr Cys Ser His Arg				
324	329	334	339	
ctc tcc act gcc ttc acc aag gtg ctg cct ttt aaa gac tgg att gaa				1592
Leu Ser Thr Ala Phe Thr Lys Val Leu Pro Phe Lys Asp Trp Ile Glu				
340	345	350	355	
aga aat atg aaa tga accatgctca tgcactcctt gagaagtgtt tctgtatatc				1647
Arg Asn Met Lys *				
356				
cgtctgtacg tgtgtcattg cgtgaagcag tgtgggcctg aagtgtgatt tggcctgtga				1707
acttggtgtg gccagggcct ctgacttcag ggacaaaact cagtgaaggg tgagtagacc				1767
tccattgctg gtaggctgat gccgcgtcca ctactaggac agccaattgg aagatgccag				1827
ggcttgcaag aagtaagttt cttcaaagaa gaccatatac aaaacctctc cactccactg				1887
acctggtggt cttccccaac tttcagttat acgaatgcc aacagcttgac cagggaagat				1947
ctgggcttca tgaggccct tttgaggctc tcaagttcta gagagctgcc tgtgggacag				2007
cccagggcag cagagctggg atgtgggtgca tgcctttgtg tacatggcca cagtacagtc				2067
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actacaaaaa aaaaaaa				2144

<210> 970

<211> 1139

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (38)..(1084)

<400> 970

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cga gcc gcg ctg tgc gag tgt cgg aga tgg cgg ggc ttc agc acc tcg	103
Arg Ala Ala Leu Cys Glu Cys Arg Arg Trp Arg Gly Phe Ser Thr Ser	
7 12 17 22	
gcc gtc ctg ggc cgc cgg aca ccc ccg ctg ggg ccg atg ccc aac agt	151
Ala Val Leu Gly Arg Arg Thr Pro Pro Leu Gly Pro Met Pro Asn Ser	
23 28 33 38	
gac atc gac ttg agc aac ctg gag cgg ctg gag aag tac cgg agc ttc	199
Asp Ile Asp Leu Ser Asn Leu Glu Arg Leu Glu Lys Tyr Arg Ser Phe	
39 44 49 54	
gac cgc tac cgg cgc cga gca gag cag gag gcg cag gcc ccg cac tgg	247
Asp Arg Tyr Arg Arg Arg Ala Glu Gln Glu Ala Gln Ala Pro His Trp	
55 60 65 70	
tgg cgg acc tac cga gag tat ttc ggg gag aag aca gat ccc aaa gag	295
Trp Arg Thr Tyr Arg Glu Tyr Phe Gly Glu Lys Thr Asp Pro Lys Glu	
71 76 81 86	
aag att gat att ggg ctg cct cca ccc aaa gtc tcc cgg acc caa cag	343
Lys Ile Asp Ile Gly Leu Pro Pro Pro Lys Val Ser Arg Thr Gln Gln	
87 92 97 102	
cta ctg gaa cgg aaa cag gcc atc cag gag ctt cgg gcc aat gtg gaa	391
Leu Leu Glu Arg Lys Gln Ala Ile Gln Glu Leu Arg Ala Asn Val Glu	
103 108 113 118	
gag gag cgg gct gcc cgc ctc cgc aca gcc agt gtc ccg ctg gat gcc	439
Glu Glu Arg Ala Ala Arg Leu Arg Thr Ala Ser Val Pro Leu Asp Ala	
119 124 129 134	
gtg cgg gcc gag tgg gag agg acc tgt ggc ccc tac cac aag cag cgt	487
Val Arg Ala Glu Trp Glu Arg Thr Cys Gly Pro Tyr His Lys Gln Arg	
135 140 145 150	
ctg gct gag tat tac ggc ctc tac cga gac ctg ttc cac ggt gcc acc	535
Leu Ala Glu Tyr Tyr Gly Leu Tyr Arg Asp Leu Phe His Gly Ala Thr	
151 156 161 166	
ttt gtg ccc cga gtc ccc ctg cac gtg gcc tac gct gtg ggt gag gat	583
Phe Val Pro Arg Val Pro Leu His Val Ala Tyr Ala Val Gly Glu Asp	
167 172 177 182	
gac ctg atg cct gtg tac tgt ggc aat gag gtg act cca acc gag gct	631
Asp Leu Met Pro Val Tyr Cys Gly Asn Glu Val Thr Pro Thr Glu Ala	
183 188 193 198	
gcc caa gcg cca gag gtg acc tat gag gca gaa gag ggc tcc ttg tgg	679

Ala Gln Ala Pro Glu Val Thr Tyr Glu Ala Glu Glu Gly Ser Leu Trp	
199 204 209 214	
acg ttg cta ctc act agc ttg gat ggg cac ctg ctg gag cca gat gct	727
Thr Leu Leu Leu Thr Ser Leu Asp Gly His Leu Leu Glu Pro Asp Ala	
215 220 225 230	
gag tac ctc cac tgg ctg cta acc aac atc ccg ggt aac cgg gtg gct	775
Glu Tyr Leu His Trp Leu Leu Thr Asn Ile Pro Gly Asn Arg Val Ala	
231 236 241 246	
gaa gga cag gtg acg tgt ccc tac ctc ccc ccc ttc cct gcc cga ggc	823
Glu Gly Gln Val Thr Cys Pro Tyr Leu Pro Pro Phe Pro Ala Arg Gly	
247 252 257 262	
tcc ggc atc cac cgt ctt gcc ttc ctg ctc ttc aag cag gac cag ccg	871
Ser Gly Ile His Arg Leu Ala Phe Leu Leu Phe Lys Gln Asp Gln Pro	
263 268 273 278	
att gac ttc tct gag gac gca cgc ccc tca ccc tgc tat cag ctg gcc	919
Ile Asp Phe Ser Glu Asp Ala Arg Pro Ser Pro Cys Tyr Gln Leu Ala	
279 284 289 294	
cag cgg acc ttc cgc act ttt gat ttc tac aag aaa cac caa gaa acc	967
Gln Arg Thr Phe Arg Thr Phe Asp Phe Tyr Lys Lys His Gln Glu Thr	
295 300 305 310	
atg act cca gcc ggc ttg tcc ttc ttc cag tgc cgc tgg gat gac tcc	1015
Met Thr Pro Ala Gly Leu Ser Phe Phe Gln Cys Arg Trp Asp Asp Ser	
311 316 321 326	
gtc acc tac atc ttc cac cag ctt ctg gac atg cgg gag ccg gtg ttt	1063
Val Thr Tyr Ile Phe His Gln Leu Leu Asp Met Arg Glu Pro Val Phe	
327 332 337 342	
gag ttc gtg cgg ccg ctc tag ag tatccctcga ggggcccaag cttacgcgta	1116
Glu Phe Val Arg Pro Leu *	
343 348	
cccagctttc ttgtacaaag tgg	1139

<210> 971
 <211> 1180
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (264) .. (1028)

<400> 971	
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ttgtcaaaag aaatacaaaa gcaaaggcta ttttcttttt ttttttcttt ctttcattcc	120

Phe Leu Ser Lys Cys Lys Phe Tyr Ser Ser *
 291 296 301

tggaatgaatt gtatatttgca aagatagtta gagaaatacc tccttcccct tagctttatt 1152
 aaggtatcat tgataataa aaataaaata tgtttaatgt atataatgtg atttttaaatt 1212
 atatatatat atacacacat tgtgaaataa tgaaataaag gtaattaaca caaaaaaaaaa 1272
 aaaaaaaaaa 1281

<210> 973
 <211> 1225
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (77) .. (898)

<400> 973
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 gcgctcggct cgcagg atg gat ccc gta ccc ggg aca gac tcg gcg ccg 109
 Met Asp Pro Val Pro Gly Thr Asp Ser Ala Pro
 1 5
 ctg gct ggc ctg gcc tgg tcg tcg gcc tct gca ccc ccg ccg ccg ggg 157
 Leu Ala Gly Leu Ala Trp Ser Ser Ala Ser Ala Pro Pro Pro Arg Gly
 12 17 22 27
 ttc agc gcg atc tcc tgc acc gtc gag ggg gca ccc gcc agc ttt ggc 205
 Phe Ser Ala Ile Ser Cys Thr Val Glu Gly Ala Pro Ala Ser Phe Gly
 28 33 38 43
 aag agc ttc gcg cag aaa tct ggc tac ttc ctg tgc ctt agt tct ctg 253
 Lys Ser Phe Ala Gln Lys Ser Gly Tyr Phe Leu Cys Leu Ser Ser Leu
 44 49 54 59
 ggc agc cta gag aac ccg cag gag aac gtg gtg gcc gat atc cag atc 301
 Gly Ser Leu Glu Asn Pro Gln Glu Asn Val Val Ala Asp Ile Gln Ile
 60 65 70 75
 gtg gtg gac aag agc ccc ctg ccg ctg ggc ttc tcc ccc gtc tgc gac 349
 Val Val Asp Lys Ser Pro Leu Pro Leu Gly Phe Ser Pro Val Cys Asp
 76 81 86 91
 ccc atg gat tcc aag gcc tct gtg tcc aag aag aaa cgc atg tgt gtg 397
 Pro Met Asp Ser Lys Ala Ser Val Ser Lys Lys Lys Arg Met Cys Val
 92 97 102 107
 aag ctg ttg ccc ctg gga gcc acg gac acg gct gtg ttt gat gtc ccg 445
 Lys Leu Leu Pro Leu Gly Ala Thr Asp Thr Ala Val Phe Asp Val Arg
 108 113 118 123

ctg agt ggg aag acc aag aca gtg cct gga tac ctt cga ata ggg gac	493
Leu Ser Gly Lys Thr Lys Thr Val Pro Gly Tyr Leu Arg Ile Gly Asp	
124 129 134 139	
atg ggc ggc ttt gcc atc tgg tgc aag aag gcc aag gcc ccg agg cca	541
Met Gly Gly Phe Ala Ile Trp Cys Lys Lys Ala Lys Ala Pro Arg Pro	
140 145 150 155	
gtg ccc aag ccc cga ggt ctc agc cgg gac atg cag ggc ctc tct ctg	589
Val Pro Lys Pro Arg Gly Leu Ser Arg Asp Met Gln Gly Leu Ser Leu	
156 161 166 171	
gat gca gcc agc cag cca agt aag ggc ggc ctc ctg gag cgg aca gcg	637
Asp Ala Ala Ser Gln Pro Ser Lys Gly Gly Leu Leu Glu Arg Thr Ala	
172 177 182 187	
tca agg ctg ggc tct cgg gca tcc act ctg cgg agg aat gac tcc atc	685
Ser Arg Leu Gly Ser Arg Ala Ser Thr Leu Arg Arg Asn Asp Ser Ile	
188 193 198 203	
tac gag gcc tcc agc ctc tat ggc atc tca gcc atg gat ggg gtt ccc	733
Tyr Glu Ala Ser Ser Leu Tyr Gly Ile Ser Ala Met Asp Gly Val Pro	
204 209 214 219	
ttc aca ctc cac cca cga ttt gag ggc aag agc tgc agc ccc ctg gcc	781
Phe Thr Leu His Pro Arg Phe Glu Gly Lys Ser Cys Ser Pro Leu Ala	
220 225 230 235	
ttc tct gct ttt ggg gac ctg acc atc aag tct ctg gcg gac att gag	829
Phe Ser Ala Phe Gly Asp Leu Thr Ile Lys Ser Leu Ala Asp Ile Glu	
236 241 246 251	
gag gag tat aac tac ggc ttc gtg gtg gag aag acc gcg gct gcc cgc	877
Glu Glu Tyr Asn Tyr Gly Phe Val Val Glu Lys Thr Ala Ala Ala Arg	
252 257 262 267	
ctg ccc ccc agc gtc tca tag tc cctcaccctt ccgcggaaag agccccctta	930
Leu Pro Pro Ser Val Ser *	
268 273	
ctccacctcc ccgccagcct gggggggccac cccccctcac tgcattcctgg gaaccttcgc	990
cctgcaaggc gtttgctatc ttcagccact gggcggagct gcagccctgg aggagggggc	1050
gggtcgaggc tgcgtggtga tggggtctcc gccccacgc cctgccgggc agggctggag	1110
ctggacagaa gccagtgcct ttaagtcatt tgtgtcaaaa cctctgggg tccggaggct	1170
gtgcgggtgt cctcctggca ataaacacta cccggttctc gccaaaaaaaa aaaaa	1225

<210> 974
 <211> 1583
 <212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (38) .. (1300)

<400> 974

ccttcaagtc ctaacctttc ccttcctgga agaaagg atg atg acc aag atg gac 55
Met Met Thr Lys Met Asp

1

ccc aat gac cag gct caa agg gac atc ata ttt gaa ctg agg agg att 103
Pro Asn Asp Gln Ala Gln Arg Asp Ile Ile Phe Glu Leu Arg Arg Ile
7 12 17 22

gca ttt gac gca gag tct gat cct agc aat gcc cct ggg agt ggg acc 151
Ala Phe Asp Ala Glu Ser Asp Pro Ser Asn Ala Pro Gly Ser Gly Thr
23 28 33 38

gaa aaa cgc aaa gcc atg tac aca aag gac tac aaa atg ctg gga ttt 199
Glu Lys Arg Lys Ala Met Tyr Thr Lys Asp Tyr Lys Met Leu Gly Phe
39 44 49 54

acc aac cac atc aat cca gcc atg gac ttt acc cag act cct cct gga 247
Thr Asn His Ile Asn Pro Ala Met Asp Phe Thr Gln Thr Pro Pro Gly
55 60 65 70

atg ctg gcc ttg gac aac atg ctg tac ttg gct aaa gtc cac cag gac 295
Met Leu Ala Leu Asp Asn Met Leu Tyr Leu Ala Lys Val His Gln Asp
71 76 81 86

acc tac atc cgg att gtc ttg gag aac agt agc cgg gaa gac aaa cat 343
Thr Tyr Ile Arg Ile Val Leu Glu Asn Ser Ser Arg Glu Asp Lys His
87 92 97 102

gaa tgc ccc ttt ggc cgc agt gcc att gag ctc acc aaa atg ctc tgt 391
Glu Cys Pro Phe Gly Arg Ser Ala Ile Glu Leu Thr Lys Met Leu Cys
103 108 113 118

gaa atc ctg cag gtt ggg gaa cta cca aat gaa gga cgc aat gac tac 439
Glu Ile Leu Gln Val Gly Glu Leu Pro Asn Glu Gly Arg Asn Asp Tyr
119 124 129 134

cac ccg atg ttc ttt acc cat gac cga gcc ttt gaa gag ctc ttt gga 487
His Pro Met Phe Phe Thr His Asp Arg Ala Phe Glu Glu Leu Phe Gly
135 140 145 150

atc tgc atc cag ctg ttg aac aag acc tgg aag gag atg agg gca aca 535
Ile Cys Ile Gln Leu Leu Asn Lys Thr Trp Lys Glu Met Arg Ala Thr
151 156 161 166

gca gag gac ttc aac aag gtt atg caa gtc gtc cga gag caa atc act 583
Ala Glu Asp Phe Asn Lys Val Met Gln Val Val Arg Glu Gln Ile Thr
167 172 177 182

cga gct ttg ccc tcc aaa ccc aac tct ttg gat cag ttc aag agc aaa 631
Arg Ala Leu Pro Ser Lys Pro Asn Ser Leu Asp Gln Phe Lys Ser Lys

183	188	193	198	
ttg cgt agc ctg agt	tac tct gag att cta	cga ctg cgc cag tct	gag	679
Leu Arg Ser Leu Ser Tyr	Ser Glu Ile Leu Arg	Leu Arg Gln Ser	Glu	
199	204	209	214	
agg atg agt cag gat	gac ttc cag tcc ccg	cca att gtg gag ctg	agg	727
Arg Met Ser Gln Asp	Asp Phe Gln Ser Pro	Pro Ile Val Glu Leu	Arg	
215	220	225	230	
gag aag atc cag ccc	gag atc ctt gag ctg	atc aag cag cag cgc	ctg	775
Glu Lys Ile Gln Pro	Glu Ile Leu Glu Leu	Ile Lys Gln Gln Arg	Leu	
231	236	241	246	
aac cgg ctc tgt gag	ggc agc agc ttc cga	aag att ggg aac cgc	cga	823
Asn Arg Leu Cys Glu	Gly Ser Ser Phe Arg	Lys Ile Gly Asn Arg	Arg	
247	252	257	262	
agg caa gaa cgg ttc	tgg tac tgc cgg ttg	gca ctg aac cac aag	gtc	871
Arg Gln Glu Arg Phe	Trp Tyr Cys Arg Leu	Ala Leu Asn His Lys	Val	
263	268	273	278	
ctt cac tat ggt gag	ttg gat gac aac cca	caa ggg gag gtg aca	ttt	919
Leu His Tyr Gly Asp	Leu Asp Asp Asn Pro	Gln Gly Glu Val Thr	Phe	
279	284	289	294	
gaa tcc ctg cag gag	aaa att cct gtt gca	gac att aag gcc att	gtc	967
Glu Ser Leu Gln Glu	Lys Ile Pro Val Ala	Asp Ile Lys Ala Ile	Val	
295	300	305	310	
act ggg aaa gat tgt	ccc cac atg aaa gag	aaa agt gct ctg aaa	cag	1015
Thr Gly Lys Asp Cys	Pro His Met Lys Glu	Lys Ser Ala Leu Lys	Gln	
311	316	321	326	
aac aag gag gtg ttg	gaa ttg gcc ttc tcc	atc ctg tat gac cct	gat	1063
Asn Lys Glu Val Leu	Glu Leu Ala Phe Ser	Ile Leu Tyr Asp Pro	Asp	
327	332	337	342	
gag acc tta aac ttc	atc gca cct aat aaa	tat gag tac tgc atc	tgg	1111
Glu Thr Leu Asn Phe	Ile Ala Pro Asn Lys	Tyr Glu Tyr Cys Ile	Trp	
343	348	353	358	
att gac ggc ctc agt	gcc ctt ctg ggg aag	gac atg tcc agt gag	ctg	1159
Ile Asp Gly Leu Ser	Ala Leu Leu Gly Lys	Asp Met Ser Ser Glu	Leu	
359	364	369	374	
acc aag agt gac ctg	gac acc ctg ctg agc	atg gag atg aag ctg	cgg	1207
Thr Lys Ser Asp Leu	Asp Thr Leu Leu Ser	Met Glu Met Lys Leu	Arg	
375	380	385	390	
ctc ctg gac ctg gag	aac atc cag att ccc	gaa gcc cca ccc ccc	atc	1255
Leu Leu Asp Leu Glu	Asn Ile Gln Ile Pro	Glu Ala Pro Pro Pro	Ile	
391	396	401	406	
ccc aag gag ccc agc	agc tat gac ttt gtc	tat cac tat ggc tga	gcc	1303
Pro Lys Glu Pro Ser	Ser Tyr Asp Phe Val	Tyr His Tyr Gly *		
407	412	417		

Gln Asp Ile Val Tyr Lys Leu Val Pro Gly Leu Gln Glu Ala Glu Met	
75 80 85 90	
aga aag cag agg gag ttc tat cac aaa ttg ggc atg gag gtg ccg gga	700
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Glu Glu Lys Pro Glu Glu Asp Asn Asp Tyr His Arg Ser Asp Glu Gln	
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Val Ser Ile Cys Leu Glu Cys Asn Ser Ser Lys Leu Arg Gly Leu Lys	
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Arg Lys Trp Ile Arg Cys Ser Ala Gln Ala Thr Val Leu His Leu Lys	
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Lys Phe Ile Ala Lys Lys Leu Asn Leu Ser Ser Phe Asn Glu Leu Asp	
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Ile Leu Cys Asn Glu Glu Ile Leu Gly Lys Asp His Thr Leu Lys Phe	
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Val Val Val Thr Arg Trp Arg Phe Lys Lys Ala Pro Leu Leu Leu His	
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Tyr Arg Pro Lys Met Asp Leu Leu *	
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Met Ser Val Arg Thr
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Asp Glu Trp Thr Glu Val Asp Arg Lys Arg Val Leu Asn Asp Ile Ile
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Ser Thr Met Phe Asn Arg Lys Phe Met Glu Glu Leu Phe Lys Pro Gln
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Glu Leu Tyr Ser Lys Lys Ala Leu Arg Thr Val Tyr Glu Arg Leu Ala
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His Ala Ser Ile Met Lys Leu Asn Gln Ala Ser Met Asp Lys Leu Tyr
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102 107 112 117
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Pro Lys Asp Val Leu Leu Val Thr Phe Asn His Leu Asp Thr Ile Lys
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Leu Arg Gln Leu Thr Glu Ile Tyr Gly Gly Leu Ser Ala Gly Glu Phe				
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cag ctg atc cgg cag aca ctc ctc atc ttc ttc caa gac ctg cac atc				642
Gln Leu Ile Arg Gln Thr Leu Leu Ile Phe Phe Gln Asp Leu His Ile				
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cga gta tcc atg ttt cta aag gac aaa gtt cag aat aat aac ggt cgc				690
Arg Val Ser Met Phe Leu Lys Asp Lys Val Gln Asn Asn Asn Gly Arg				
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Phe Val Leu Pro Val Ser Gly Pro Val Pro Trp Gly Thr Glu Val Pro				
198	203	208	213	
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Gly Leu Ile Arg Met Phe Asn Asn Lys Gly Glu Glu Val Lys Arg Ile				
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Glu Phe Lys His Gly Gly Asn Tyr Val Pro Ala Pro Lys Glu Gly Ser				
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Phe Glu Leu Tyr Gly Asp Arg Val Leu Lys Leu Gly Thr Asn Met Tyr				
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agc gtg aat cag cct gtg gaa act cat gtg tct gga tca tca aag aac				930
Ser Val Asn Gln Pro Val Glu Thr His Val Ser Gly Ser Ser Lys Asn				
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tta gcc tca tgg acc cag gaa agc att gct cca aac cct ctt gct aaa				978
Leu Ala Ser Trp Thr Gln Glu Ser Ile Ala Pro Asn Pro Leu Ala Lys				
278	283	288	293	
gaa gag ctg aat ttc ttg gcc agg ctg atg gga ggg atg gag att aag				1026
Glu Glu Leu Asn Phe Leu Ala Arg Leu Met Gly Gly Met Glu Ile Lys				
294	299	304	309	
aaa ccc agt ggc cct gag ccc gga ttc cgg ttg aat ctc ttt acc acc				1074
Lys Pro Ser Gly Pro Glu Pro Gly Phe Arg Leu Asn Leu Phe Thr Thr				
310	315	320	325	
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Asp Glu Glu Glu Glu Gln Ala Ala Leu Thr Arg Pro Glu Glu Leu Ser				
326	331	336	341	
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Tyr Glu Val Ile Asn Ile Gln Ala Thr Gln Ser Leu Phe Ser Asn Leu				
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Ala Thr Ile Gln Gly Gly Leu Thr Gly *				
358	363			

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 Phe Pro Ala Thr Ala Ala Ile Phe Arg Pro Gly Lys Val Leu Gly Ala
 17 22 27 32

gct ctg ggg agg gtc agg gac act gct gac tac gtg aag cca gtg acc 144
 Ala Leu Gly Arg Val Arg Asp Thr Ala Asp Tyr Val Lys Pro Val Thr
 33 38 43 48

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 Phe Ser Val Glu Tyr Ser Leu Glu Asp Pro Asp His Gly Pro Met Leu
 49 54 59 64

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 Asp Asp Gly Trp Pro Thr Thr Leu Arg Val Ser Asp Thr Ala Asp Tyr
 65 70 75 80

gtg aag cca gtg acc ttc tca gtc gag tat tcc ctg gag gac cct gac 288
 Val Lys Pro Val Thr Phe Ser Val Glu Tyr Ser Leu Glu Asp Pro Asp
 81 86 91 96

cat ggc ccc atg ctg gac gac ggc tgg ccc acc act ctc aga gtc tcg 336
 His Gly Pro Met Leu Asp Asp Gly Trp Pro Thr Thr Leu Arg Val Ser
 97 102 107 112

gta cat ctc gct gca gcg gtg gcg acc aaa cgg gtg ttg gag ttg gcg 384
 Val His Leu Ala Ala Val Ala Thr Lys Arg Val Leu Glu Leu Ala
 113 118 123 128

gcg gcc atg gag ggc ctg gct ggc tat gta tac aag gcg gcc agc gag 432
 Ala Ala Met Glu Gly Leu Ala Gly Tyr Val Tyr Lys Ala Ala Ser Glu
 129 134 139 144

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Gly Lys Val Leu Thr Leu Ala Ala Leu Leu Leu Asn Arg Ser Glu Ser	
145 150 155 160	
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Asp Ile Arg Tyr Leu Leu Gly Tyr Val Ser Gln Gln Gly Gly Gln Arg	
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Ser Thr Pro Leu Ile Ile Ala Ala Arg Asn Gly His Ala Lys Val Val	
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Arg Leu Leu Leu Glu His Tyr Arg Val Gln Thr Gln Gln Thr Gly Thr	
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Val Arg Phe Asp Gly Tyr Val Ile Asp Gly Ala Thr Ala Leu Trp Cys	
209 214 219 224	
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Ala Ala Gly Ala Gly His Phe Glu Val Val Lys Leu Leu Val Ser His	
225 230 235 240	
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Gly Ala Asn Val Asn His Thr Thr Val Thr Asn Ser Thr Pro Leu Arg	
241 246 251 256	
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Ala Ala Cys Phe Asp Gly Arg Leu Asp Ile Val Lys Tyr Leu Val Glu	
257 262 267 272	
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Asn Asn Ala Asn Ile Ser Ile Ala Asn Lys Tyr Asp Asn Thr Cys Leu	
273 278 283 288	
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Met Ile Ala Ala Tyr Lys Gly His Thr Asp Val Val Arg Tyr Leu Leu	
289 294 299 304	
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Glu Gln Arg Ala Asp Pro Asn Ala Lys Ala His Cys Gly Ala Thr Ala	
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Leu His Phe Ala Ala Glu Ala Gly His Ile Asp Ile Val Lys Glu Leu	
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Ile Lys Trp Arg Ala Ala Ile Val Val Asn Gly His Gly Met Thr Pro	
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Leu Lys Val Ala Ala Glu Ser Cys Lys Ala Asp Val Val Glu Leu Leu	
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Leu Leu Gly Ala Ser Phe Ala Asn Asp Arg Glu Asn Tyr Asp Ile Ile	
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Lys Thr Tyr His Tyr Leu Tyr Leu Ala Met Leu Glu Arg Phe Gln Asp	
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449 454 459 464	
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Ile Leu Gly Ala Asp Asn Ile Asp Val Ser His Pro Ile Ile Tyr Arg	
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Trp Leu His Ala Leu His Leu Arg Gln Lys Gly Asn Arg Asn Thr His	
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Lys Asp Leu Leu Arg Phe Ala Gln Val Phe Ser Gln Met Ile His Leu	
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Asn Glu Thr Val Lys Ala Pro Asp Ile Glu Cys Val Leu Arg Cys Ser	
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Val Leu Glu Ile Glu Gln Ser Met Asn Arg Val Lys Asn Ile Ser Asp	
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gct gat gtc cac aat gct atg gac aat tat gaa tgt aat ctc tat acc	1728
Ala Asp Val His Asn Ala Met Asp Asn Tyr Glu Cys Asn Leu Tyr Thr	
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Pro	Arg	Thr	Arg	Glu	Gly	Phe	Thr	Leu	Leu	His	Leu	Ala	Val	Asn	Ser	
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Met Asn His Leu Pro Glu Asp Met Glu Asn Ala Leu
1 5 10
acc ggg agc cag agc tcc cat gct tct ctg cgc aat atc cat tcc atc 277
Thr Gly Ser Gln Ser Ser His Ala Ser Leu Arg Asn Ile His Ser Ile
13 18 23 28
aac ccc aca caa ctc atg gcc agg att gag tcc tat gaa gga agg gaa 325
Asn Pro Thr Gln Leu Met Ala Arg Ile Glu Ser Tyr Glu Gly Arg Glu
29 34 39 44

aag aaa ggc ata tct gat gtc agg agg act ttc tgt ttg ttt gtc acc	373
Lys Lys Gly Ile Ser Asp Val Arg Arg Thr Phe Cys Leu Phe Val Thr	
45 50 55 60	
ttt gac ctc tta ttc gta aca tta ctg tgg ata ata gag tta aat gtg	421
Phe Asp Leu Leu Phe Val Thr Leu Leu Trp Ile Ile Glu Leu Asn Val	
61 66 71 76	
aat gga ggc att gag aac aca tta gag aag gag gtg atg cag tat gac	469
Asn Gly Gly Ile Glu Asn Thr Leu Glu Lys Glu Val Met Gln Tyr Asp	
77 82 87 92	
tac tat tct tca tat ttt gat ata ttt ctt ctg gca gtt ttt cga ttt	517
Tyr Tyr Ser Ser Tyr Phe Asp Ile Phe Leu Leu Ala Val Phe Arg Phe	
93 98 103 108	
aaa gtg tta ata ctt gca tat gct gtg tgc aga ctg cgc cat tgg tgg	565
Lys Val Leu Ile Leu Ala Tyr Ala Val Cys Arg Leu Arg His Trp Trp	
109 114 119 124	
gca ata gcg ttg aca acg gca gtg acc agt gcc ttt tta cta gca aaa	613
Ala Ile Ala Leu Thr Thr Ala Val Thr Ser Ala Phe Leu Leu Ala Lys	
125 130 135 140	
gtg atc ctt tcg aag ctt ttc tct caa ggg gct ttt ggc tat gtg ctg	661
Val Ile Leu Ser Lys Leu Phe Ser Gln Gly Ala Phe Gly Tyr Val Leu	
141 146 151 156	
ccc atc att tca ttc atc ctt gcc tgg att gag acg tgg ttc ctg gat	709
Pro Ile Ile Ser Phe Ile Leu Ala Trp Ile Glu Thr Trp Phe Leu Asp	
157 162 167 172	
ttc aaa gtg tta cct caa gaa gca gaa gaa gaa aac aga ctc ctg ata	757
Phe Lys Val Leu Pro Gln Glu Ala Glu Glu Glu Asn Arg Leu Leu Ile	
173 178 183 188	
gtt cag gat gct tca gag agg gca gca ctt ata cct ggt ggt ctt tct	805
Val Gln Asp Ala Ser Glu Arg Ala Ala Leu Ile Pro Gly Gly Leu Ser	
189 194 199 204	
gat ggt cag ttt tat tcc cct cct gaa tcc gaa gca gga tct gaa gaa	853
Asp Gly Gln Phe Tyr Ser Pro Pro Glu Ser Glu Ala Gly Ser Glu Glu	
205 210 215 220	
gct gaa gaa aaa cag gac agt gag aaa cca ctt tta gaa cta tga gta	901
Ala Glu Glu Lys Gln Asp Ser Glu Lys Pro Leu Leu Glu Leu *	
221 226 231	
ctacttttgt taaatgtgaa aaaccctcac agaaagtcac cgaggcaaaa agaggcaggc	961
agtggagtct ccctgtcgac agtaaagttg aaatgggtgac gtccactgct ggctttattg	1021
aacagctaataaagatttat ttattgtaataacctcacaga cgttgtacca tatccatgca	1081
catttagttg cctgcctgtg gctggtaagg taatgtcatg attcatcctc tcttcagtga	1141
gactgagcct gatgtgttaa caaataggtg aagaaagtct tgtgctgtat tcctaataca	1201

aagacttaat atattgaagt aacacttttt tagtaagcaa gatacctttt tatttcaatt 1261
cacagaatgg aatttttttg tttcatgtct cagatttatt ttgtatttct tttttaacac 1321
tctacatttc ccttggtttt taactcatgc acatgtgctc tttgtacagt tttaaaaagt 1381
gtaataaaat ctgacatgtc aatgtggcta gttttatttt tcttgttttg cattatgtgt 1441
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gtcaccagac atttgtatta tttttatcat gaaatcatgt ttttctctga ttgttctgaa 1561
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gaaccacccg ttaaggtgtc ttctcttttag ggatgggtgag gttggaaaaa ggctcctgta 180
accctcctcc agg atg aac cac ctg cca gaa gac atg gag aac gct ctc 229
Met Asn His Leu Pro Glu Asp Met Glu Asn Ala Leu
1 5 10
acc ggg agc cag agc tcc cat gct tct ctg cgc aat atc cat tcc atc 277
Thr Gly Ser Gln Ser Ser His Ala Ser Leu Arg Asn Ile His Ser Ile
13 18 23 28
aac ccc aca caa ctc atg gcc agg att gag tcc tat gaa gga agg gaa 325
Asn Pro Thr Gln Leu Met Ala Arg Ile Glu Ser Tyr Glu Gly Arg Glu
29 34 39 44
aag aaa ggc ata tct gat gtc agg agg act ttc tgt ttg ttt gtc acc 373
Lys Lys Gly Ile Ser Asp Val Arg Arg Thr Phe Cys Leu Phe Val Thr
45 50 55 60
ttt gac ctc tta ttc gta aca tta ctg tgg ata ata gag tta aat gtg 421
Phe Asp Leu Leu Phe Val Thr Leu Leu Trp Ile Ile Glu Leu Asn Val
61 66 71 76
aat gga ggc att gag aac aca tta gag aag gag gtg atg cag tat gac 469

Asn Gly Gly Ile Glu Asn Thr Leu Glu Lys Glu Val Met Gln Tyr Asp	
77 82 87 92	
tac tat tct tca tat ttt gat ata ttt ctt ctg gca gtt ttt cga ttt	517
Tyr Tyr Ser Ser Tyr Phe Asp Ile Phe Leu Leu Ala Val Phe Arg Phe	
93 98 103 108	
aaa gtg tta ata ctt gca tat gct gtg tgc aga ctg cgc cat tgg tgg	565
Lys Val Leu Ile Leu Ala Tyr Ala Val Cys Arg Leu Arg His Trp Trp	
109 114 119 124	
gca ata gcg ctt ttc tct caa ggg gct ttt ggc tat gtg ctg ccc atc	613
Ala Ile Ala Leu Phe Ser Gln Gly Ala Phe Gly Tyr Val Leu Pro Ile	
125 130 135 140	
att tca ttc atc ctt gcc tgg att gag acg tgg ttc ctg gat ttc aaa	661
Ile Ser Phe Ile Leu Ala Trp Ile Glu Thr Trp Phe Leu Asp Phe Lys	
141 146 151 156	
gtg tta cct caa gaa gca gaa gaa gaa aac aga ctc ctg ata gtt cag	709
Val Leu Pro Gln Glu Ala Glu Glu Glu Asn Arg Leu Leu Ile Val Gln	
157 162 167 172	
gat gct tca gag agg gca gca ctt ata cct ggt ggt ctt tct gat ggt	757
Asp Ala Ser Glu Arg Ala Ala Leu Ile Pro Gly Gly Leu Ser Asp Gly	
173 178 183 188	
cag ttt tat tcc cct cct gaa tcc gaa gca gga tct gaa gaa gct gaa	805
Gln Phe Tyr Ser Pro Pro Glu Ser Glu Ala Gly Ser Glu Glu Ala Glu	
189 194 199 204	
gaa aaa cag gac agt gag aaa cca ctt tta gaa cta tga gtactacttt	854
Glu Lys Gln Asp Ser Glu Lys Pro Leu Leu Glu Leu *	
205 210 215	
tgtaaagt gaaaaacct cacagaaagt catcgaggca aaaagaggca ggcagtggag	914
tctccctgtc gacagtaaag ttgaaatggt gacgtccact gctggcttta ttgaacagct	974
aataaagatt tattttattgt aatacctcac agacgttgta ccatatccat gcacatttag	1034
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cctgatgtgt taacaaatag gtgaagaaag tcttgtgctg ttttcctaat caaaagactt	1154
aatatattga agtaaacactt ttttagtaag caagatacct ttttatttca attcacagaa	1214
tggaatTTTT ttgtttcatg tctcagattt attttgtatt tcttttttaa cactctacat	1274
ttcccttggt ttttaactca tgcacatgtg ctctttgtac agttttaaaa agtgtaataa	1334
aatctgacat gtcaatgtgg ctagttttat ttttcttggt ttgcattatg tgtatggcct	1394
gaagtgttgg acttgcaaaa ggggaagaaa ggaattgcga atacatgtaa aatgtcacca	1454
gacatttgta ttatttttat catgaaatca tgtttttctc tgattgttct gaaatgttct	1514

aaatactctt attttgaatg cacaaaatga cttaaaccat tcatatcatg tttcctttgc 1574
gttcagccaa tttcaattaa aatgaactaa attataaaaa aaaaaaa 1621

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gggatgggta attcttggtt tgggtgcttt tcttcaccgc tctaaggaaac taccacagtc 180
agaagggtgca ttcttactgc gatcttttta tttgctacct tgggcttaag gagcctgcct 240
atatctactg aggtgaggtt aggtcagtct ctgtaaccgt tcgtcactta ggccttgatg 300
ggtgacatgg atggggatga ctctctgggc taactcttct cttgctaaag gatgattttt 360
caccaccttg aatgcccatag attaaaacat aaacaagaaa atagatatct gaggagaatg 420
cagttgaaac taattttgtg gatagagaaa ctgttggaac tgctttacaa agtattttta 480
cagcccacct gaggatattg accataagga ctcatatctc attacaagaa gcatac atg 538
Met
1

gcc gag cca gac tac ata gaa gat gac aat cct gaa ctc att agg cct 586
Ala Glu Pro Asp Tyr Ile Glu Asp Asp Asn Pro Glu Leu Ile Arg Pro
2 7 12 17

cag aaa ctg atc aat cct gta aaa acc tcc cgg aac cat caa gat ctt 634
Gln Lys Leu Ile Asn Pro Val Lys Thr Ser Arg Asn His Gln Asp Leu
18 23 28 33

cac aga gaa ctt ctt atg aat caa aaa agg ggt ctt gct cct cag aac 682
His Arg Glu Leu Leu Met Asn Gln Lys Arg Gly Leu Ala Pro Gln Asn
34 39 44 49

aaa cca gaa ttg cag aag gtg atg gaa aaa aga aaa cga gac caa gta 730
Lys Pro Glu Leu Gln Lys Val Met Glu Lys Arg Lys Arg Asp Gln Val
50 55 60 65

ata aag cag aag gaa gaa gaa gca cag aag aag aaa tct gac ttg gaa 778
Ile Lys Gln Lys Glu Glu Glu Ala Gln Lys Lys Lys Ser Asp Leu Glu
66 71 76 81

ata gag cta tta aaa cgg cag cag aag ttg gag cag ctt gaa ctt gag	826
Ile Glu Leu Leu Lys Arg Gln Gln Lys Leu Glu Gln Leu Glu Leu Glu	
82 87 92 97	
aag cag aaa ttg caa gaa gag caa gaa aat gcc ccc gag ttt gtg aag	874
Lys Gln Lys Leu Gln Glu Glu Gln Glu Asn Ala Pro Glu Phe Val Lys	
98 103 108 113	
gtg aaa ggc aat ctc agg aga aca ggc caa gaa gtc gcc caa gcc cag	922
Val Lys Gly Asn Leu Arg Arg Thr Gly Gln Glu Val Ala Gln Ala Gln	
114 119 124 129	
gag tcc tag gctgagg ctgcaccaag acctcgtgtg tcaccccaca gagctgtctg	978
Glu Ser *	
130	
tggttgccct ctcaatctca gggcaaaagc ccctggagaa tatttcagcc agcagagaat	1038
tttgacttgc agtaggattt ggtttgattt tctacgatac tgggtggatg ccttgccctgt	1098
gacagttgca gttcctattc gccaaatgaa gggcagtgcc ccgcacgtaa gttggaatga	1158
tggacctgtg ttcagagact taacagaacc aacaagcaaa acaagtgaga acaggaaaaa	1218
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tctttttggt atctgttaga taattgagat cacctagaaa tgcgtttaat ctgttcactc	1398
actgtaaatt ttgaggaccc agaattgtct tgtttaattt atactttcac ccctgttgca	1458
gttaacacca gagaaggaac gtgaatgtcg agcacagcca ctacccttgt tggcacttaa	1518
tttagaaata gggtgagaag tttaaaagcc catcttgatt ttattttcat tccttttgggt	1578
tctctgtgta ataatagcag gctacatagt gacattccag ttccaagaag gtacatcctg	1638
tccattcatt aattgctttg attactagga gggtttctgt tcagttttgt ttttaaattg	1698
cttgctgata tagttctttc agatggaata accttccagt cccttagaga gtggaactag	1758
tccatataac ccagcttcag tagcaaaagt agaagccgcc acatcttttc atttctccaa	1818
gaggagagtg gggaagggtc cgtcgacgcg gcgcgaatt cggatcctcg agagatctct	1878
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at	1940

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 cacctcagtc acctagtggg tttgacatct ggggatacgt tgtatggggtt ggcagaaaaga 180
 gtggtagcca cggaatcctt ggtattcttg gctgaacagt ttgagttcct tcagccacat 240
 ctggatgctg tg atg cct gca gtc aaa aag ccc ttt ctt cag cag ttc 288
 Met Pro Ala Val Lys Lys Pro Phe Leu Gln Gln Phe
 1 5 10
 tat tct cag aca gtc tca acc gcc agt gaa cta cgg aaa cca att tac 336
 Tyr Ser Gln Thr Val Ser Thr Ala Ser Glu Leu Arg Lys Pro Ile Tyr
 13 18 23 28
 tgg att gta gct ggt aaa gcc ctt gat tat gaa cag atg ctg ctt ctc 384
 Trp Ile Val Ala Gly Lys Ala Leu Asp Tyr Glu Gln Met Leu Leu Leu
 29 34 39 44
 atg gct aat gtg aaa tgg gat gta aaa gaa att atg tca cag cac aac 432
 Met Ala Asn Val Lys Trp Asp Val Lys Glu Ile Met Ser Gln His Asn
 45 50 55 60
 ata tat gta gat gca cta tta aag gaa ttt gag cag ttt aac agg agg 480
 Ile Tyr Val Asp Ala Leu Leu Lys Glu Phe Glu Gln Phe Asn Arg Arg
 61 66 71 76
 cta aat gaa gtt tct aag aga gtt cgc ata ccc ttg cct gtg tct aat 528
 Leu Asn Glu Val Ser Lys Arg Val Arg Ile Pro Leu Pro Val Ser Asn
 77 82 87 92
 ata ctt tgg gaa cat tgt ata cga ttg gct aat cga act att gta gaa 576
 Ile Leu Trp Glu His Cys Ile Arg Leu Ala Asn Arg Thr Ile Val Glu
 93 98 103 108
 gga tat gcc aat gtc aag aaa tgc agt aat gag ggt cgt gcc ctg atg 624
 Gly Tyr Ala Asn Val Lys Lys Cys Ser Asn Glu Gly Arg Ala Leu Met
 109 114 119 124
 caa ttg gat ttt caa cag ttt tta atg aaa ctt gaa aaa cta aca gat 672
 Gln Leu Asp Phe Gln Gln Phe Leu Met Lys Leu Glu Lys Leu Thr Asp
 125 130 135 140
 att aga ccc att cct gat aaa gaa ttt gta gaa act tat att aaa gct 720
 Ile Arg Pro Ile Pro Asp Lys Glu Phe Val Glu Glu Thr Tyr Ile Lys Ala
 141 146 151 156
 tat tac cta act gag aat gac atg gaa cgg tgg atc aaa gag cac agg 768
 Tyr Tyr Leu Thr Glu Asn Asp Met Glu Arg Trp Ile Lys Glu His Arg
 157 162 167 172

[illegible]

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Gly Arg Asp Ser Cys Thr Met Arg Pro Ser Ser Leu Gly Gln Gly Ala	
39 44 49 54	
gga gaa gtc tgg ctt cgc gtc gac tgc cgc aac aca gac cag acc tac	304
Gly Glu Val Trp Leu Arg Val Asp Cys Arg Asn Thr Asp Gln Thr Tyr	
55 60 65 70	
tgg tgt gag tac agg ggg cag ccc agc atg tgc cag gct ttt gct gct	352
Trp Cys Glu Tyr Arg Gly Gln Pro Ser Met Cys Gln Ala Phe Ala Ala	
71 76 81 86	
gac ccc aaa tct tac tgg aat caa gcc ctg cag gag ctg agg cgc ctt	400
Asp Pro Lys Ser Tyr Trp Asn Gln Ala Leu Gln Glu Leu Arg Arg Leu	
87 92 97 102	
cac cat gcg tgc cag ggg gcc ccg gtg ctt agg cca tcc gtg tgc agg	448
His His Ala Cys Gln Gly Ala Pro Val Leu Arg Pro Ser Val Cys Arg	
103 108 113 118	
gag gct gga ccc cag gcc cat atg cag cag gtg act tcc agc ctc aag	496
Glu Ala Gly Pro Gln Ala His Met Gln Gln Val Thr Ser Ser Leu Lys	
119 124 129 134	
ggc agc cca gag ccc aac cag cag cct gag gct ggg acg cca tct ctg	544
Gly Ser Pro Glu Pro Asn Gln Gln Pro Glu Ala Gly Thr Pro Ser Leu	
135 140 145 150	
agg ccc aag gcc aca gtg aaa ctc aca gaa gca aca cag ctg gga aag	592
Arg Pro Lys Ala Thr Val Lys Leu Thr Glu Ala Thr Gln Leu Gly Lys	
151 156 161 166	
gac tcg atg gaa gag ctg gga aaa gcc aaa ccc acc acc cga ccc aca	640
Asp Ser Met Glu Glu Gly Lys Ala Lys Pro Thr Thr Arg Pro Thr	
167 172 177 182	
gcc aaa cct acc cag cct gga ccc agg ccc gga ggg aat gag gaa gca	688
Ala Lys Pro Thr Gln Pro Gly Pro Arg Pro Gly Gly Asn Glu Glu Ala	
183 188 193 198	
aag aag aag gcc tgg gaa cat tgt tgg aaa ccc ttc cag gcc ctg tgc	736
Lys Lys Lys Ala Trp Glu His Cys Trp Lys Pro Phe Gln Ala Leu Cys	
199 204 209 214	
gcc ttt ctc atc agc ttc ttc cga ggg tga c aggtgaaaga ccctacaga	787
Ala Phe Leu Ile Ser Phe Phe Arg Gly *	
215 220	
tctgacctct cctgacaga caaccatctc tttttatatt atgccgcttt caatccaacg	847
ttctcacact ggaagaagag agtttctaata cagatgcaac ggcccaaatt cttgatctgc	907
agcttctctg aagtttgga aagaaacctt cctttctgga gtttgagag ttcagcaata	967

tgatagggaa caggtgctga tgggccaag agtgacaagc atacacaact acttattatc	1027
tgtagaagtt ttgctttggt gatctgagcc ttctatgaaa gtttaaataat gtaacgcatt	1087
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cagaaaaaaaa aaaaa	1162

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 <222> (224) .. (2227)

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ccggacccgg attcccggtt cgaccacgc gttcgcaaag gagctattga aggtcggaga	180
tttctccctt tgtgctgggc cctaccaaaa tacagcagac acc atg gaa aac ctc	235
Met Glu Asn Leu	

1

agt aaa gag cct ttg gcc tcc ttt gtt tca gaa tcc ttt gat att tct	283
Ser Lys Glu Pro Leu Ala Ser Phe Val Ser Glu Ser Phe Asp Ile Ser	
5 10 15 20	

gct tgt gga ata gcc aca gag cac gta aaa att gat aac agt ggg gag	331
Ala Cys Gly Ile Ala Thr Glu His Val Lys Ile Asp Asn Ser Gly Glu	
21 26 31 36	

ggg ctc acg gct gag gct ggt tct gaa acc cta agc aga gat gga gag	379
Gly Leu Thr Ala Glu Ala Gly Ser Glu Thr Leu Ser Arg Asp Gly Glu	
37 42 47 52	

gtc ggt gtg aat tcc gac atg cac tat gaa ctc tct gga gat tct gat	427
Val Gly Val Asn Ser Asp Met His Tyr Glu Leu Ser Gly Asp Ser Asp	
53 58 63 68	

cta gac ctg ctt ggt gat tgt aga aat ccc aga ctg gat ttg gag gat	475
Leu Asp Leu Leu Gly Asp Cys Arg Asn Pro Arg Leu Asp Leu Glu Asp	
69 74 79 84	

tct tat act tta aga ggt agt tac acc agg aaa aaa gat gtt ccc aca	523
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Ser	Tyr	Thr	Leu	Arg	Gly	Ser	Tyr	Thr	Arg	Lys	Lys	Asp	Val	Pro	Thr	
85					90					95					100	
gat	ggc	tat	gag	tcg	tcg	ttg	aac	ttc	cac	aac	aac	aac	caa	gag	gac	571
Asp	Gly	Tyr	Glu	Ser	Ser	Leu	Asn	Phe	His	Asn	Asn	Asn	Gln	Glu	Asp	
101					106					111					116	
tgg	ggc	tgc	tct	agc	tgg	gtt	cca	ggc	atg	gag	acg	agc	ctc	cct	ccc	619
Trp	Gly	Cys	Ser	Ser	Trp	Val	Pro	Gly	Met	Glu	Thr	Ser	Leu	Pro	Pro	
117					122					127					132	
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Gly	His	Trp	Thr	Ala	Ala	Val	Lys	Lys	Glu	Glu	Lys	Cys	Val	Pro	Pro	
133					138					143					148	
tac	gtc	caa	atc	cga	gat	ctc	cac	ggg	atc	ctc	agg	act	tac	gcc	aac	715
Tyr	Val	Gln	Ile	Arg	Asp	Leu	His	Gly	Ile	Leu	Arg	Thr	Tyr	Ala	Asn	
149					154					159					164	
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Phe	Ser	Ile	Thr	Lys	Glu	Leu	Lys	Asp	Thr	Met	Arg	Thr	Ser	His	Gly	
165					170					175					180	
ctg	agg	agg	cac	ccg	agt	ttc	agt	gca	aac	tgt	ggc	ctg	ccc	agc	tcc	811
Leu	Arg	Arg	His	Pro	Ser	Phe	Ser	Ala	Asn	Cys	Gly	Leu	Pro	Ser	Ser	
181					186					191					196	
tgg	aca	agc	act	tgg	cag	gtg	gca	gac	gac	ctc	acc	cag	aac	act	tta	859
Trp	Thr	Ser	Thr	Trp	Gln	Val	Ala	Asp	Asp	Leu	Thr	Gln	Asn	Thr	Leu	
197					202					207					212	
gac	ctg	gag	tat	ctg	cgt	ttt	gca	cat	aaa	cta	aaa	cag	acc	ata	aag	907
Asp	Leu	Glu	Tyr	Leu	Arg	Phe	Ala	His	Lys	Leu	Lys	Gln	Thr	Ile	Lys	
213					218					223					228	
aat	ggg	gat	tct	cag	cat	tct	gcc	tcc	tct	gcc	aat	gtc	ttt	cca	aag	955
Asn	Gly	Asp	Ser	Gln	His	Ser	Ala	Ser	Ser	Ala	Asn	Val	Phe	Pro	Lys	
229					234					239					244	
gag	tca	cca	acc	cag	atc	tcc	att	ggg	gct	ttc	cct	tcg	aca	aaa	atc	1003
Glu	Ser	Pro	Thr	Gln	Ile	Ser	Ile	Gly	Ala	Phe	Pro	Ser	Thr	Lys	Ile	
245					250					255					260	
tct	gag	gcc	cca	ttt	ctg	cat	cct	gca	cct	agg	agc	aga	agc	ccc	ctt	1051
Ser	Glu	Ala	Pro	Phe	Leu	His	Pro	Ala	Pro	Arg	Ser	Arg	Ser	Pro	Leu	
261					266					271					276	
ctg	gta	aca	gtt	gtg	gag	tca	gat	ccc	aga	cca	cag	ggg	cag	ccc	agg	1099
Leu	Val	Thr	Val	Val	Glu	Ser	Asp	Pro	Arg	Pro	Gln	Gly	Gln	Pro	Arg	
277					282					287					292	
aga	ggc	tac	aca	gcc	agc	agt	ctg	gac	agc	tct	tcc	tct	tgg	aga	gag	1147
Arg	Gly	Tyr	Thr	Ala	Ser	Ser	Leu	Asp	Ser	Ser	Ser	Ser	Trp	Arg	Glu	
293					298					303					308	
aga	tgt	agt	cat	aat	aga	gat	ctt	aga	aat	tct	caa	aga	aat	cac	act	1195
Arg	Cys	Ser	His	Asn	Arg	Asp	Leu	Arg	Asn	Ser	Gln	Arg	Asn	His	Thr	

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gtt tca ttc cac ctc aac aaa ctg aaa tac aac agt act gtg aag gaa				1243
Val Ser Phe His Leu Asn Lys Leu Lys Tyr Asn Ser Thr Val Lys Glu				
325	330	335	340	
tct cgg aat gat att tca ctt att ctc aat gag tat gct gaa ttc aac				1291
Ser Arg Asn Asp Ile Ser Leu Ile Leu Asn Glu Tyr Ala Glu Phe Asn				
341	346	351	356	
aag gtg atg aag aat agc aac caa ttc att ttc caa gac aaa gag cta				1339
Lys Val Met Lys Asn Ser Asn Gln Phe Ile Phe Gln Asp Lys Glu Leu				
357	362	367	372	
aat gat gtt tct gga gaa gcc act gct caa gag atg tat ctg cct ttc				1387
Asn Asp Val Ser Gly Glu Ala Thr Ala Gln Glu Met Tyr Leu Pro Phe				
373	378	383	388	
cca gga cgg tca gcc tcc tat gaa gac ata atc ata gac gtg tgc acc				1435
Pro Gly Arg Ser Ala Ser Tyr Glu Asp Ile Ile Ile Asp Val Cys Thr				
389	394	399	404	
aat ttg cac gtc aaa cta aga agt gtt gtg aaa gag gct tgt aaa agt				1483
Asn Leu His Val Lys Leu Arg Ser Val Val Lys Glu Ala Cys Lys Ser				
405	410	415	420	
acc ttc ctg ttc tac ctt gtc gaa aca gaa gac aaa tca ttc ttt gta				1531
Thr Phe Leu Phe Tyr Leu Val Glu Thr Glu Asp Lys Ser Phe Phe Val				
421	426	431	436	
aga aca aag aac ctt ctg agg aaa gga ggc cat aca gaa att gaa cct				1579
Arg Thr Lys Asn Leu Leu Arg Lys Gly Gly His Thr Glu Ile Glu Pro				
437	442	447	452	
cag cac ttc tgt caa gct ttc cac aga gag aat gat aca cta atc atc				1627
Gln His Phe Cys Gln Ala Phe His Arg Glu Asn Asp Thr Leu Ile Ile				
453	458	463	468	
atc atc aga aat gaa gat ata tca tca cat ttg cat cag att cct tct				1675
Ile Ile Arg Asn Glu Asp Ile Ser Ser His Leu His Gln Ile Pro Ser				
469	474	479	484	
ttg ctg aag ctg aag cat ttc ccc agt gtc atc ttt gct gga gta gac				1723
Leu Leu Lys Leu Lys His Phe Pro Ser Val Ile Phe Ala Gly Val Asp				
485	490	495	500	
agc cct gga gat gtt ctt gat cac acc tac caa gaa ctg ttt cgt gca				1771
Ser Pro Gly Asp Val Leu Asp His Thr Tyr Gln Glu Leu Phe Arg Ala				
501	506	511	516	
gga ggc ttt gtg ata tca gat gac aag ata cta gaa gct gta aca tta				1819
Gly Gly Phe Val Ile Ser Asp Asp Lys Ile Leu Glu Ala Val Thr Leu				
517	522	527	532	
/				
gtt caa ctg aag gaa att atc aaa atc ctg gaa aaa cta aat gga aat				1867
Val Gln Leu Lys Glu Ile Ile Lys Ile Leu Glu Lys Leu Asn Gly Asn				
533	538	543	548	

gga aga tgg aag tgg ttg ctt cac tac agg gaa aat aaa aag cta aaa	1915
Gly Arg Trp Lys Trp Leu Leu His Tyr Arg Glu Asn Lys Lys Leu Lys	
549 554 559 564	
gaa gat gaa aga gtg gat tca act gca cat aag aag aac ata atg ttg	1963
Glu Asp Glu Arg Val Asp Ser Thr Ala His Lys Lys Asn Ile Met Leu	
565 570 575 580	
aag tca ttt cag agt gca aat atc att gaa ttg ctt cat tat cac cag	2011
Lys Ser Phe Gln Ser Ala Asn Ile Ile Glu Leu Leu His Tyr His Gln	
581 586 591 596	
tgt gac tct cga tca tca aca aaa gca gaa att ctg aaa tgt ttg cta	2059
Cys Asp Ser Arg Ser Ser Thr Lys Ala Glu Ile Leu Lys Cys Leu Leu	
597 602 607 612	
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Asn Leu Gln Ile Gln His Ile Asp Ala Arg Phe Ala Val Leu Leu Thr	
613 618 623 628	
gac aag cct act atc ccc aga gaa gtc ttt gaa aat aat gga atc ctt	2155
Asp Lys Pro Thr Ile Pro Arg Glu Val Phe Glu Asn Asn Gly Ile Leu	
629 634 639 644	
gtt aca gat gta aat aac ttt ata gaa aac ata gaa aaa ata gca gct	2203
Val Thr Asp Val Asn Asn Phe Ile Glu Asn Ile Glu Lys Ile Ala Ala	
645 650 655 660	
cca ttt agg agt agc tat tgg tga ctcaactaca gcctgcctgg atatggatga	2257
Pro Phe Arg Ser Ser Tyr Trp *	
661 666	
tgccaataaa aaattagtat tttccctttg gaaaacttgt gaacatgtga atacacatgt	2317
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cggatattgt aaatactaca ctacaaaaat cagctttctg agaaagaaat aatcatttat	2797
ttatgatatt gaaaatttct acagtaaaca ctcaaaacca agcaaaaaac atttgtaaga	2857
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aggcctcctt cctccctctt gccactcccc ctccctttcc cgctcttctt gcccaccggt      180
ccggcagaga gaggctggat acgaagcagg cgggcttcag agtgggttgg aaaa  atg      237
                                   Met
                                   1

gag gtg ccg cgc ctg gat cat gcc ctc aac agc ccc acc agc ccc tgt      285
Glu Val Pro Arg Leu Asp His Ala Leu Asn Ser Pro Thr Ser Pro Cys
  2              7              12              17

gag gag gtg atc aaa aac ctc agc ctg gag gcc att cag ctg tgc gac      333
Glu Glu Val Ile Lys Asn Leu Ser Leu Glu Ala Ile Gln Leu Cys Asp
  18              23              28              33

cgg gac ggg aac aaa tca caa gac agt ggc ata gca gag atg gaa gaa      381
Arg Asp Gly Asn Lys Ser Gln Asp Ser Gly Ile Ala Glu Met Glu Glu
  34              39              44              49

ctt cct gta cca cat aac atc aaa ata agc aat ata acg tgt gac tca      429
Leu Pro Val Pro His Asn Ile Lys Ile Ser Asn Ile Thr Cys Asp Ser
  50              55              60              65

ttc aag att tca tgg gaa atg gat tca aaa tca aag gat cgc att aca      477
Phe Lys Ile Ser Trp Glu Met Asp Ser Lys Ser Lys Asp Arg Ile Thr
  66              71              76              81

cac tat ttt att gac ctc aac aag aaa gag aac aag aac tcc aat aaa      525
His Tyr Phe Ile Asp Leu Asn Lys Lys Glu Asn Lys Asn Ser Asn Lys
  82              87              92              97

ttt aaa cac aag gat gtt ccc aca aaa ttg gtg gca aaa gct gtt ccc      573
Phe Lys His Lys Asp Val Pro Thr Lys Leu Val Ala Lys Ala Val Pro
  98              103              108              113

ttg cct atg act gtc cgt gga cac tgg ttt tta agc cca aga act gaa      621
Leu Pro Met Thr Val Arg Gly His Trp Phe Leu Ser Pro Arg Thr Glu
  114              119              124              129

tat aca gta gca gtg cag act gcc tca aaa caa gtt gat ggt gat tat      669
Tyr Thr Val Ala Val Gln Thr Ala Ser Lys Gln Val Asp Gly Asp Tyr

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gtt gtg tct gaa tgg agt gaa att ata gaa ttc tgc acc gca gac tat				717
Val Val Ser Glu Trp Ser Glu Ile Ile Glu Phe Cys Thr Ala Asp Tyr				
146	151	156	161	
tca aaa gtt cat cta aca caa ttg ttg gag aag gct gaa gtg att gca				765
Ser Lys Val His Leu Thr Gln Leu Leu Glu Lys Ala Glu Val Ile Ala				
162	167	172	177	
gga cgc atg ctt aag ttt tct gtt ttt tat cgt aat cag cac aaa gaa				813
Gly Arg Met Leu Lys Phe Ser Val Phe Tyr Arg Asn Gln His Lys Glu				
178	183	188	193	
tat ttt gac tat gtt cga gaa cat cat ggg aat gct atg cag cca tct				861
Tyr Phe Asp Tyr Val Arg Glu His His Gly Asn Ala Met Gln Pro Ser				
194	199	204	209	
gtc aag gat aac agt ggt agc cat ggc tct cct atc agt gga aaa tta				909
Val Lys Asp Asn Ser Gly Ser His Gly Ser Pro Ile Ser Gly Lys Leu				
210	215	220	225	
gaa ggc atc ttc ttc agc tgc agc act gaa ttc aat act gga aag cca				957
Glu Gly Ile Phe Phe Ser Cys Ser Thr Glu Phe Asn Thr Gly Lys Pro				
226	231	236	241	
ccc cag gat tca cct tat gga aga tac agg ttt gag att gcc gca gaa				1005
Pro Gln Asp Ser Pro Tyr Gly Arg Tyr Arg Phe Glu Ile Ala Ala Glu				
242	247	252	257	
aaa ctt ttt aac ccc aat act aac tta tac ttt ggg gac ttc tac tgt				1053
Lys Leu Phe Asn Pro Asn Thr Asn Leu Tyr Phe Gly Asp Phe Tyr Cys				
258	263	268	273	
atg tac act gct tat cat tat gtg att ctt gtt att gct cct gtg gga				1101
Met Tyr Thr Ala Tyr His Tyr Val Ile Leu Val Ile Ala Pro Val Gly				
274	279	284	289	
tca cca gga gat gaa ttt tgt aag cag cgc ctt cct caa cta aat tct				1149
Ser Pro Gly Asp Glu Phe Cys Lys Gln Arg Leu Pro Gln Leu Asn Ser				
290	295	300	305	
aag gat aat aaa ttt ttg acc tgt aca gaa gaa gat ggg gtg ctg gtt				1197
Lys Asp Asn Lys Phe Leu Thr Cys Thr Glu Glu Asp Gly Val Leu Val				
306	311	316	321	
tac cac cat gcc cag gat gtc att tta gaa gtc att tac act gac cct				1245
Tyr His His Ala Gln Asp Val Ile Leu Glu Val Ile Tyr Thr Asp Pro				
322	327	332	337	
gtg gat ctt tct ctg ggc acc gtg gca gaa atc act ggt cat cag ctc				1293
Val Asp Leu Ser Leu Gly Thr Val Ala Glu Ile Thr Gly His Gln Leu				
338	343	348	353	
atg agt ttg tct act gca aat gca aag aaa gat ccc agc tgc aaa acc				1341
Met Ser Leu Ser Thr Ala Asn Ala Lys Lys Asp Pro Ser Cys Lys Thr				
354	359	364	369	

tgt aat atc agt gtt gga cgt taa tgcccacttt cctatttccc taccctccc 1395
 Cys Asn Ile Ser Val Gly Arg *
 370 375

actactttca atgatgaaat accctaagtt aagttctcct ttgacactt tattgcgtag 1455
 atgctgcaat gtttttatgt ttcctttatg ccaaacataa caaaacagtt atatagactg 1515
 ctttagcaaa gtacacaata atggcttata aatgggtgttt aaatatgcat tcattttaat 1575
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 gcgctgcgct cgctccgctc cggtcccgcg tgccccacct tctggctagt tttttctaga 180
 gccaggctc cgcccgtttc ccgcttcag ggcccggttc gttcccgccc gcaccgctcc 240
 ctctcctctg caccctgct gcttctgctt tgaaggcgga ggctcc atg ttg tcc 295
 Met Leu Ser
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cct cag cga gtg gca gca gct gcc tca aga gga gca gat gat gcc atg 343
 Pro Gln Arg Val Ala Ala Ala Ser Arg Gly Ala Asp Asp Ala Met
 4 9 14 19

gag agc agc aag cct ggt cca gtg cag gtt gtt ttg gtt cag aaa gat 391
 Glu Ser Ser Lys Pro Gly Pro Val Gln Val Val Leu Val Gln Lys Asp
 20 25 30 35

caa cat tcc ttt gag cta gat gag aaa gcc ttg gcc agc atc ctc ttg 439
 Gln His Ser Phe Glu Leu Asp Glu Lys Ala Leu Ala Ser Ile Leu Leu
 36 41 46 51

cag gac cac atc cga gat ctt gat gtg gtg gtg gtt tca gtg gct ggt 487

Gln	Asp	His	Ile	Arg	Asp	Leu	Asp	Val	Val	Val	Val	Ser	Val	Ala	Gly		
52					57					62					67		
gcc	ttc	cga	aag	ggc	aag	tcc	ttc	att	ctg	gat	ttt	atg	cta	cga	tac		535
Ala	Phe	Arg	Lys	Gly	Lys	Ser	Phe	Ile	Leu	Asp	Phe	Met	Leu	Arg	Tyr		
68					73					78					83		
tta	tat	tct	cag	aag	gaa	agt	ggc	cat	tca	aat	tgg	ttg	ggt	gac	cca		583
Leu	Tyr	Ser	Gln	Lys	Glu	Ser	Gly	His	Ser	Asn	Trp	Leu	Gly	Asp	Pro		
84					89					94					99		
gaa	gaa	ccg	tta	aca	gga	ttt	tcc	tgg	aga	ggg	gga	tct	gat	cca	gaa		631
Glu	Glu	Pro	Leu	Thr	Gly	Phe	Ser	Trp	Arg	Gly	Gly	Ser	Asp	Pro	Glu		
100					105					110					115		
acc	act	ggg	att	caa	atc	tgg	agt	gaa	gtt	ttc	act	gtg	gag	aag	cca		679
Thr	Thr	Gly	Ile	Gln	Ile	Trp	Ser	Glu	Val	Phe	Thr	Val	Glu	Lys	Pro		
116					121					126					131		
ggg	ggg	aag	aag	gtt	gca	gtt	gtt	ctg	atg	gat	acc	cag	ggg	gca	ttt		727
Gly	Gly	Lys	Lys	Val	Ala	Val	Val	Leu	Met	Asp	Thr	Gln	Gly	Ala	Phe		
132					137					142					147		
gac	agc	cag	tca	act	gtg	aaa	gac	tgt	gct	acc	atc	ttt	gct	cta	agc		775
Asp	Ser	Gln	Ser	Thr	Val	Lys	Asp	Cys	Ala	Thr	Ile	Phe	Ala	Leu	Ser		
148					153					158					163		
act	atg	act	agt	tct	gtt	cag	att	tat	aat	tta	tct	cag	aac	att	caa		823
Thr	Met	Thr	Ser	Ser	Val	Gln	Ile	Tyr	Asn	Leu	Ser	Gln	Asn	Ile	Gln		
164					169					174					179		
gaa	gat	gat	ctt	caa	cag	ctg	cag	ctc	ttc	aca	gaa	tac	ggg	cgt	ctg		871
Glu	Asp	Asp	Leu	Gln	Gln	Leu	Gln	Leu	Phe	Thr	Glu	Tyr	Gly	Arg	Leu		
180					185					190					195		
gca	atg	gat	gaa	att	ttc	caa	aag	cct	ttc	cag	aca	ctg	atg	ttt	ttg		919
Ala	Met	Asp	Glu	Ile	Phe	Gln	Lys	Pro	Phe	Gln	Thr	Leu	Met	Phe	Leu		
196					201					206					211		
gtt	aga	gat	tgg	agt	ttc	cct	tat	gaa	tat	agc	tat	gga	ctc	caa	gga		967
Val	Arg	Asp	Trp	Ser	Phe	Pro	Tyr	Glu	Tyr	Ser	Tyr	Gly	Leu	Gln	Gly		
212					217					222					227		
gga	atg	gca	ttt	ttg	gat	aag	cgt	tta	cag	gtg	aag	gaa	cat	caa	cat		1015
Gly	Met	Ala	Phe	Leu	Asp	Lys	Arg	Leu	Gln	Val	Lys	Glu	His	Gln	His		
228					233					238					243		
gaa	gaa	att	cag	aat	gtt	cga	aat	cac	att	cac	tca	tgt	ttc	tcc	gat		1063
Glu	Glu	Ile	Gln	Asn	Val	Arg	Asn	His	Ile	His	Ser	Cys	Phe	Ser	Asp		
244					249					254					259		
gtc	acc	tgc	ttt	ctc	tta	cca	cat	cca	gga	ctc	cag	gtg	gcc	aca	agc		1111
Val	Thr	Cys	Phe	Leu	Leu	Pro	His	Pro	Gly	Leu	Gln	Val	Ala	Thr	Ser		
260					265					270					275		
cct	gac	ttt	gat	ggg	aaa	tta	aaa	gat	att	gct	ggg	gaa	ttc	aaa	gag		1159
Pro	Asp	Phe	Asp	Gly	Lys	Leu	Lys	Asp	Ile	Ala	Gly	Glu	Phe	Lys	Glu		

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cag tta cag gca ctg ata ccg tat gta tta aac cca tct aag tta atg				1207
Gln Leu Gln Ala Leu Ile Pro Tyr Val Leu Asn Pro Ser Lys Leu Met				
292	297	302	307	
gaa aag gag atc aat ggc tca aag gtc acc tgt cgg gga cta ctg gag				1255
Glu Lys Glu Ile Asn Gly Ser Lys Val Thr Cys Arg Gly Leu Leu Glu				
308	313	318	323	
tat ttt aag gca tat att aaa att tat caa gga gaa gat ctg cct cac				1303
Tyr Phe Lys Ala Tyr Ile Lys Ile Tyr Gln Gly Glu Asp Leu Pro His				
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ccc aag tcc atg ctt cag gcc act gct gaa gcc tac aac tta gca gct				1351
Pro Lys Ser Met Leu Gln Ala Thr Ala Glu Ala Tyr Asn Leu Ala Ala				
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gca gcc tct gcc aag gac att tat tat aac aac atg gaa gag gtt tgt				1399
Ala Ala Ser Ala Lys Asp Ile Tyr Tyr Asn Asn Met Glu Glu Val Cys				
356	361	366	371	
ggg gga gag aaa cct tat ttg tct cca gac att cta gag gag aag cac				1447
Gly Gly Glu Lys Pro Tyr Leu Ser Pro Asp Ile Leu Glu Glu Lys His				
372	377	382	387	
tgt gaa ttc aaa caa ctt gct ctg gac cat ttt aag aag acc aag aag				1495
Cys Glu Phe Lys Gln Leu Ala Leu Asp His Phe Lys Lys Thr Lys Lys				
388	393	398	403	
atg ggt ggg aag gat ttc agc ttt cgt tac cag cag gag ctg gag gag				1543
Met Gly Gly Lys Asp Phe Ser Phe Arg Tyr Gln Gln Glu Leu Glu Glu				
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gaa atc aag gaa tta tat gag aac ttc tgc aag cac aat ggt agc aag				1591
Glu Ile Lys Glu Leu Tyr Glu Asn Phe Cys Lys His Asn Gly Ser Lys				
420	425	430	435	
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Asn Val Phe Ser Thr Phe Arg Thr Pro Ala Val Leu Phe Thr Gly Ile				
436	441	446	451	
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Val Ala Leu Tyr Ile Ala Ser Gly Leu Thr Gly Phe Ile Gly Leu Glu				
452	457	462	467	
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Val Val Ala Gln Leu Phe Asn Cys Met Val Gly Leu Leu Leu Ile Ala				
468	473	478	483	
ctc ctc acc tgg ggc tac atc agg tat tct ggt caa tat cgt gag ctg				1783
Leu Leu Thr Trp Gly Tyr Ile Arg Tyr Ser Gly Gln Tyr Arg Glu Leu				
484	489	494	499	
ggc gga gct att gat ttt ggt gcc gca tat gtg ttg gag cag gct tct				1831
Gly Gly Ala Ile Asp Phe Gly Ala Ala Tyr Val Leu Glu Gln Ala Ser				
500	505	510	515	

tct cat atc ggt aat tcc act cag gcc act gtg agg gat gca gtt gtt	1879
Ser His Ile Gly Asn Ser Thr Gln Ala Thr Val Arg Asp Ala Val Val	
516 521 526 531	
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Gly Arg Pro Ser Met Asp Lys Lys Ala Gln *	
532 537 542	
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Ala Gly Met Gln Ile Leu Gly Val Val Leu Thr Leu Leu Gly Trp Val	
4 9 14 19	
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Asn Gly Leu Val Ser Cys Ala Leu Pro Met Trp Lys Val Thr Ala Phe	
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Ile Gly Asn Ser Ile Val Val Ala Gln Val Val Trp Glu Gly Leu Trp	
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Met Ser Cys Val Val Gln Ser Thr Gly Gln Met Gln Cys Lys Val Tyr	
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Asp Ser Leu Leu Ala Leu Pro Gln Asp Leu Gln Ala Ala Arg Ala Leu	
68 73 78 83	
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Cys Val Ile Ala Leu Leu Val Ala Leu Phe Gly Leu Leu Val Tyr Leu	
84 89 94 99	
gct ggg gcc aag tgt acc acc tgt gtg gag gag aag gat tcc aag gcc	390

Ala Gly Ala Lys Cys Thr Thr Cys Val Glu Glu Lys Asp Ser Lys Ala	
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cgc ctg gtg ctc acc tct ggg att gtc ttt gtc atc tca ggg gtc ctg	438
Arg Leu Val Leu Thr Ser Gly Ile Val Phe Val Ile Ser Gly Val Leu	
116 121 126 131	
acg cta atc ccc gtg tgc tgg acg gcg cat gcc gtc atc cgg gac ttc	486
Thr Leu Ile Pro Val Cys Trp Thr Ala His Ala Val Ile Arg Asp Phe	
132 137 142 147	
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Tyr Asn Pro Leu Val Ala Glu Ala Gln Lys Arg Glu Leu Gly Ala Ser	
148 153 158 163	
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Leu Tyr Leu Gly Trp Ala Ala Ser Gly Leu Leu Leu Leu Gly Gly Gly	
164 169 174 179	
ttg ctg tgc tgc act tgc ccc tcg ggg ggg tcc cag ggc ccc agc cat	630
Leu Leu Cys Cys Thr Cys Pro Ser Gly Gly Ser Gln Gly Pro Ser His	
180 185 190 195	
tac atg gcc cgc tac tca aca tct gcc cct gcc atc tct cgg ggg ccc	678
Tyr Met Ala Arg Tyr Ser Thr Ser Ala Pro Ala Ile Ser Arg Gly Pro	
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Ser Glu Tyr Pro Thr Lys Asn Tyr Val *	
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cgactgcgc tatggcccgg cgggtgtggc gggctgggcg ataaaatcag ttgctcgccg	180
accgctgaaa atgttgctgg ctgtggcgct ggaaccgctg ttaagtcggg ctgctaataa	240
actggcacag cggtataaaa ggtgagggga gtttcgcaaa aattgttaaa tctcaggcgt	300
ataatggatg gcaattttca tccatagaag gacgcttac atg ttt aaa aaa ggc	354
Met Phe Lys Lys Gly	

tta ctt gct ctg gca ctg gtg ttt tca ctg ccc gtt ttc gcc gct gaa	402
Leu Leu Ala Leu Ala Leu Val Phe Ser Leu Pro Val Phe Ala Ala Glu	
6 11 16 21	
cac tgg atc gat gtt cgt gtt cca gag cag tat cag caa gag cac gtt	450
His Trp Ile Asp Val Arg Val Pro Glu Gln Tyr Gln Gln Glu His Val	
22 27 32 37	
cag ggg gcc atc aat att ccc ctg aag gaa gtg aaa gag cgc att gcc	498
Gln Gly Ala Ile Asn Ile Pro Leu Lys Glu Val Lys Glu Arg Ile Ala	
38 43 48 53	
acc gcc gtt ccg gat aaa aac gac acc gtg aaa gtg tat tgc aat gcc	546
Thr Ala Val Pro Asp Lys Asn Asp Thr Val Lys Val Tyr Cys Asn Ala	
54 59 64 69	
gga cgc cag tca ggg caa gca aaa gag atc ctt agc gag atg gga tat	594
Gly Arg Gln Ser Gly Gln Ala Lys Glu Ile Leu Ser Glu Met Gly Tyr	
70 75 80 85	
acc cac gtt gag aac gcc ggt ggc ctg aaa gac atc gca atg ccg aag	642
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tctgcctgag aagccaggcg ctgttcccc accccagaag agg atg gca aag gtg	175
Met Ala Lys Val	
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gct aag gac ctc aac cca gga gtt aaa aag atg tcc ctg ggc cag ctg	223
Ala Lys Asp Leu Asn Pro Gly Val Lys Lys Met Ser Leu Gly Gln Leu	
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cag tca gca aga ggt gtg gca tgt ttg gga tgc aag ggg acg tgt tcg	271

Gln	Ser	Ala	Arg	Gly	Val	Ala	Cys	Leu	Gly	Cys	Lys	Gly	Thr	Cys	Ser		
21					26					31					36		
ggc	ttc	gag	cca	cat	tca	tgg	agg	aaa	ata	tgc	aag	tct	tgc	aaa	tgc		319
Gly	Phe	Glu	Pro	His	Ser	Trp	Arg	Lys	Ile	Cys	Lys	Ser	Cys	Lys	Cys		
37					42					47					52		
agc	caa	gag	gac	cac	tgc	cta	aca	tct	gac	cta	gaa	gac	gat	cgg	aaa		367
Ser	Gln	Glu	Asp	His	Cys	Leu	Thr	Ser	Asp	Leu	Glu	Asp	Asp	Arg	Lys		
53					58					63					68		
att	ggc	cgc	ttg	ctg	atg	gac	tcc	aag	tat	tcc	acc	ctc	act	gct	cgg		415
Ile	Gly	Arg	Leu	Leu	Met	Asp	Ser	Lys	Tyr	Ser	Thr	Leu	Thr	Ala	Arg		
69					74					79					84		
gtg	aaa	ggc	ggg	gac	ggc	atc	cgg	att	tac	aag	agg	aac	cgg	atg	atc		463
Val	Lys	Gly	Gly	Asp	Gly	Ile	Arg	Ile	Tyr	Lys	Arg	Asn	Arg	Met	Ile		
85					90					95					100		
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Met	Thr	Asn	Pro	Ile	Ala	Thr	Gly	Lys	Asp	Pro	Thr	Phe	Asp	Thr	Ile		
101					106					111					116		
acc	tac	gag	tgg	gct	ccc	cct	gga	gtc	acc	cag	aaa	ctg	gga	ctg	cag		559
Thr	Tyr	Glu	Trp	Ala	Pro	Pro	Gly	Val	Thr	Gln	Lys	Leu	Gly	Leu	Gln		
117					122					127					132		
tac	atg	gag	ctc	atc	ccc	aag	gag	aag	cag	cca	gtg	aca	ggc	aca	gag		607
Tyr	Met	Glu	Leu	Ile	Pro	Lys	Glu	Lys	Gln	Pro	Val	Thr	Gly	Thr	Glu		
133					138					143					148		
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Gly	Ala	Phe	Tyr	Arg	Arg	Arg	Gln	Leu	Met	His	Gln	Leu	Pro	Ile	Tyr		
149					154					159					164		
gac	cag	gat	ccc	tcg	cgc	tgc	cgt	gga	ctt	ttg	gag	aat	gag	ttg	aaa		703
Asp	Gln	Asp	Pro	Ser	Arg	Cys	Arg	Gly	Leu	Leu	Glu	Asn	Glu	Leu	Lys		
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Leu	Met	Glu	Glu	Phe	Val	Lys	Gln	Tyr	Lys	Ser	Glu	Ala	Leu	Gly	Val		
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Gly	Glu	Val	Ala	Leu	Pro	Gly	Gln	Gly	Gly	Leu	Pro	Lys	Glu	Glu	Gly		
197					202					207					212		
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Lys	Gln	Gln	Glu	Lys	Pro	Glu	Gly	Ala	Glu	Thr	Thr	Ala	Ala	Thr	Thr		
213					218					223					228		
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Asn	Gly	Ser	Leu	Ser	Asp	Pro	Ser	Lys	Glu	Val	Glu	Tyr	Val	Cys	Glu		
229					234					239					244		
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Leu	Cys	Lys	Gly	Ala	Ala	Pro	Pro	Asp	Ser	Pro	Val	Val	Tyr	Ser	Asp		

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Arg Ala Gly Tyr Asn Lys Gln Trp His Pro Thr Cys Phe Val Cys Ala				
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aag tgc tcc gag ccg ctg gtg gac ctc atc tac ttc tgg aag gat ggt				1039
Lys Cys Ser Glu Pro Leu Val Asp Leu Ile Tyr Phe Trp Lys Asp Gly				
277	282	287	292	
gca ccc tgg tgc ggc cgc cat tac tgc gag agt ctg cgg ccc cgg tgc				1087
Ala Pro Trp Cys Gly Arg His Tyr Cys Glu Ser Leu Arg Pro Arg Cys				
293	298	303	308	
tcc ggc tgc gat gag ata ata ttc gct gag gac tac cag cgt gtg gaa				1135
Ser Gly Cys Asp Glu Ile Ile Phe Ala Glu Asp Tyr Gln Arg Val Glu				
309	314	319	324	
gat ctg gcc tgg cac cga aag cac ttt gtc tgt gag ggt tgt gag cag				1183
Asp Leu Ala Trp His Arg Lys His Phe Val Cys Glu Gly Cys Glu Gln				
325	330	335	340	
ctg ctg agc ggc cgg gcg tac atc gtc acc aag ggt cag ctt ctg tgc				1231
Leu Leu Ser Gly Arg Ala Tyr Ile Val Thr Lys Gly Gln Leu Leu Cys				
341	346	351	356	
cca act tgc agc aag tcc aaa cgc tcc tga a gggctgccca cccacagcca				1282
Pro Thr Cys Ser Lys Ser Lys Arg Ser *				
357	362			
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ccgtgactcc agtgcaacgt gacgacagca tgtacgatcc ctgaatgggc ccgtgggcat      240
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tcagcgactg aaggagtgtg gactttttga atttcaagaa cagtaaagtt ggaacacagc      360
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gataaatgca aaacagtggc tgttgcagggt gatggaactg tactggaaca atgggagaag      600
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ccaagagaga gctggggact gcctgctgtc tgccagtaca atg aag gaa gtg gtt      895
                                   Met Lys Glu Val Val
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tat tgg tca ccc aag aag gtg gca gac tgg ctg ctg gag aat gct atg      943
Tyr Trp Ser Pro Lys Lys Val Ala Asp Trp Leu Leu Glu Asn Ala Met
   6                11                16                21

cca gaa tac tgt gag cct ctg gag cat ttc aca ggc cag gac ttg atc      991
Pro Glu Tyr Cys Glu Pro Leu Glu His Phe Thr Gly Gln Asp Leu Ile
  22                27                32                37

aac cta acc caa gag gat ttc aaa aaa ccc ccc ttg tgc cga gtc tcc      1039
Asn Leu Thr Gln Glu Asp Phe Lys Lys Pro Pro Leu Cys Arg Val Ser
  38                43                48                53

tct gac aac ggg cag cgg ctc ctg gac atg ata gaa acc ctg aaa atg      1087
Ser Asp Asn Gly Gln Arg Leu Leu Asp Met Ile Glu Thr Leu Lys Met
  54                59                64                69

gag cac cat ttg gaa gca cac aag aac ggc cat gcc aat ggg cac ctc      1135
Glu His His Leu Glu Ala His Lys Asn Gly His Ala Asn Gly His Leu
  70                75                80                85

aac att ggc gta gac atc ccc acc ccc gac ggc agc ttc agc atc aag      1183
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102					107					112					117	
atc	ccc	atg	cca	gaa	ctg	gag	cgc	tct	cag	tac	ccc	atg	gag	tgg	ggc	1279
Ile	Pro	Met	Pro	Glu	Leu	Glu	Arg	Ser	Gln	Tyr	Pro	Met	Glu	Trp	Gly	
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Lys	Thr	Phe	Leu	Ala	Phe	Leu	Tyr	Ala	Leu	Ser	Cys	Phe	Val	Leu	Thr	
134					139					144					149	
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Thr	Val	Met	Ile	Ser	Val	Val	His	Glu	Arg	Val	Pro	Pro	Lys	Glu	Val	
150					155					160					165	
cag	cct	cca	cta	ccg	gac	aca	ttt	ttt	gac	cat	ttt	aac	cgg	gtg	cag	1423
Gln	Pro	Pro	Leu	Pro	Asp	Thr	Phe	Phe	Asp	His	Phe	Asn	Arg	Val	Gln	
166					171					176					181	
tgg	gcc	ttt	tct	att	tgt	gaa	att	aat	ggc	atg	atc	ctt	gta	gga	ctc	1471
Trp	Ala	Phe	Ser	Ile	Cys	Glu	Ile	Asn	Gly	Met	Ile	Leu	Val	Gly	Leu	
182					187					192					197	
tgg	tta	att	cag	tgg	ctg	ctc	tta	aaa	tac	aag	tct	att	att	agc	aga	1519
Trp	Leu	Ile	Gln	Trp	Leu	Leu	Leu	Lys	Tyr	Lys	Ser	Ile	Ile	Ser	Arg	
198					203					208					213	
aga	ttt	ttc	tgc	ata	gtt	ggc	acg	ctg	tac	ctg	tat	cgg	tgt	att	aca	1567
Arg	Phe	Phe	Cys	Ile	Val	Gly	Thr	Leu	Tyr	Leu	Tyr	Arg	Cys	Ile	Thr	
214					219					224					229	
atg	tat	gta	act	aca	ctc	cca	gta	cct	ggc	atg	cat	ttc	aac	tgt	tct	1615
Met	Tyr	Val	Thr	Thr	Leu	Pro	Val	Pro	Gly	Met	His	Phe	Asn	Cys	Ser	
230					235					240					245	
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Pro	Lys	Leu	Phe	Gly	Asp	Trp	Glu	Ala	Gln	Leu	Arg	Arg	Ile	Met	Lys	
246					251					256					261	
ctc	att	gct	gga	ggc	ggc	ttg	tct	atc	act	ggc	tct	cac	aac	atg	tgt	1711
Leu	Ile	Ala	Gly	Gly	Gly	Leu	Ser	Ile	Thr	Gly	Ser	His	Asn	Met	Cys	
262					267					272					277	
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Gly	Asp	Tyr	Leu	Tyr	Ser	Gly	His	Thr	Val	Met	Leu	Thr	Leu	Thr	Tyr	
278					283					288					293	
tta	ttt	atc	aaa	gag	tat	tcc	cct	cgg	cga	ctc	tgg	tgg	tat	cac	tgg	1807
Leu	Phe	Ile	Lys	Glu	Tyr	Ser	Pro	Arg	Arg	Leu	Trp	Trp	Tyr	His	Trp	
294					299					304					309	
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Ile	Cys	Trp	Leu	Leu	Ser	Val	Val	Gly	Ile	Phe	Cys	Ile	Leu	Leu	Ala	

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cat gac cac tac act	gtg gac gtg gtg gtg	gca tat tac atc acc	acg	1903
His Asp His Tyr Thr	Val Asp Val Val Val	Ala Tyr Tyr Ile Thr	Thr	
326	331	336	341	
aga ctc ttc tgg tgg	tat cac act atg gcc	aat cag caa gtg cta	aag	1951
Arg Leu Phe Trp Trp	Tyr His Thr Met Ala	Asn Gln Gln Val Leu	Lys	
342	347	352	357	
gaa gct tcc cag atg	aac ctc ctg gcc agg	gtg tgg tgg tac agg	cca	1999
Glu Ala Ser Gln Met	Asn Leu Leu Ala Arg	Val Trp Trp Tyr Arg	Pro	
358	363	368	373	
ttt cag tac ttt gaa	aag aat gtc caa gga	att gta cct cga tct	tac	2047
Phe Gln Tyr Phe Glu	Lys Asn Val Gln Gly	Ile Val Pro Arg Ser	Tyr	
374	379	384	389	
cat tgg cct ttc ccc	tgg cca gta gtc cac	ctc agt agg caa gtt	aaa	2095
His Trp Pro Phe Pro	Trp Pro Val Val His	Leu Ser Arg Gln Val	Lys	
390	395	400	405	
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Tyr Ser Arg Leu Val	Asn Asp Thr *			
406	411			
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atg ctc atg ttt gac cca	175
Met Leu Met Phe Asp Pro	
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gtc tca gtg tca tac cca	223
Val Pro Val Lys Gln	Glu Ala Met Asp Pro
Val Ser Val Ser Tyr	Pro

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Ser Asn Tyr Met Glu Ser Met Lys Pro Asn Lys Tyr Gly Val Ile Tyr				
23	28	33	38	
tcc aca cca ttg cct gag aag ttc ttt cag acc cca gaa ggt ctg tcg				319
Ser Thr Pro Leu Pro Glu Lys Phe Phe Gln Thr Pro Glu Gly Leu Ser				
39	44	49	54	
cac gga ata cag atg gag cca gtg gac ctc acg gtg aac aag cgg agt				367
His Gly Ile Gln Met Glu Pro Val Asp Leu Thr Val Asn Lys Arg Ser				
55	60	65	70	
tca ccc cct tcg gct ggg aat tcg ccc tcc tct ctg aag ttc ccg tcc				415
Ser Pro Pro Ser Ala Gly Asn Ser Pro Ser Ser Leu Lys Phe Pro Ser				
71	76	81	86	
tca cac cgg aga gcc tcg cct ggg ttg agc atg cct tct tcc agc cca				463
Ser His Arg Arg Ala Ser Pro Gly Leu Ser Met Pro Ser Ser Ser Pro				
87	92	97	102	
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Pro Ile Lys Lys Tyr Ser Pro Pro Ser Pro Gly Val Gln Pro Phe Gly				
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Val Pro Leu Ser Met Pro Pro Val Met Ala Ala Ala Leu Ser Arg His				
119	124	129	134	
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Gly Ile Arg Ser Pro Gly Ile Leu Pro Val Ile Gln Pro Val Val Val				
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Gln Pro Val Pro Phe Met Tyr Thr Ser His Leu Gln Gln Pro Leu Met				
151	156	161	166	
gtc tcc tta tcg gag gag atg gaa aat tcc agt agt agc atg caa gta				703
Val Ser Leu Ser Glu Glu Met Glu Asn Ser Ser Ser Ser Met Gln Val				
167	172	177	182	
cct gta att gaa tca tat gag aag cct ata tca cag aaa aaa att aaa				751
Pro Val Ile Glu Ser Tyr Glu Lys Pro Ile Ser Gln Lys Lys Ile Lys				
183	188	193	198	
ata gaa cct ggg atc gaa cca cag agg aca gat tat tat cct gaa gaa				799
Ile Glu Pro Gly Ile Glu Pro Gln Arg Thr Asp Tyr Tyr Pro Glu Glu				
199	204	209	214	
atg tca ccc ccc tta atg aac tca gtg tcc ccc ccg caa gca ttg ttg				847
Met Ser Pro Pro Leu Met Asn Ser Val Ser Pro Pro Gln Ala Leu Leu				
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Gln Glu *				
231				

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 ccaaatttgt ctgcttcttc tgttggggct tctgggtgtg gagggctcac tcc atg 176
 Met
 1
 tca aac ctc cac agt tta cct ggg ctc agg ggt ttg acg tcc atc agt 224
 Ser Asn Leu His Ser Leu Pro Gly Leu Arg Gly Leu Thr Ser Ile Ser
 2 7 12 17
 agg aac cag ctc caa tgc acc aat gca atg cgg gta att aac aat tat 272
 Arg Asn Gln Leu Gln Cys Thr Asn Ala Met Arg Val Ile Asn Asn Tyr
 18 23 28 33
 caa cgg cga tgg aaa aac caa aat act ttt ctt ctt gca act ttt gct 320
 Gln Arg Arg Trp Lys Asn Gln Asn Thr Phe Leu Leu Ala Thr Phe Ala
 34 39 44 49
 aat gta gtt aat gtt tgt ggt aac cca act ata acc tgc cct cat aac 368
 Asn Val Val Asn Val Cys Gly Asn Pro Thr Ile Thr Cys Pro His Asn
 50 55 60 65
 aga act ctc aac aat tgt cat cat agt gga gtc cag gtg cct tta atg 416
 Arg Thr Leu Asn Asn Cys His His Ser Gly Val Gln Val Pro Leu Met
 66 71 76 81

tac tgt aac ctc aca act cca agt cca cag aat att tca aac tgc agg	464
Tyr Cys Asn Leu Thr Pro Ser Pro Gln Asn Ile Ser Asn Cys Arg	
82 87 92 97	

tat gcg cag aca cca gca aac atg ttc tat ata gtt gca tgt gac aac	512
Tyr Ala Gln Thr Pro Ala Asn Met Phe Tyr Ile Val Ala Cys Asp Asn	
98 103 108 113	

agg gat caa cga cgg gac cct cca cag tat cca gtg gtt cca gtt cac	560
Arg Asp Gln Arg Arg Asp Pro Pro Gln Tyr Pro Val Val Pro Val His	
114 119 124 129	

ctg cat acc atc atc taa gctcct gtatcagcac tcctcatcat cactcatctg	614
Leu His Thr Ile Ile *	
130 135	

ccaagctcct caatcatagc caagatccca tccctccatg tactctgggt gtcagcatct	674
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gtcctcttca gtctctatac cccttcact tgctgagct gaagtgcctt gtgaagcctg	734
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caataaactg ctttgcaaatt tcac	759
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<210> 992
 <211> 1854
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (559) .. (1710)

<220>
 <221> misc_feature
 <222> (1) ... (1854)
 <223> n = a,t,c or g

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catggagaaa ccctgtctct actaaaaaca caaaattagc cgggcgtagt ggcacatgcc	180
tgtaatccca gctacttggg aggctgaggc aggagaattg cttgaacccg ggaggcagag	240
gttgctgtga gctgagattg cgccactgca ctccagcttg ggcaacgaga gcaaaactcc	300
atctctaaaa aaaaaacaaa tgacattcct taagggccag ggacctttat tgtttagtcc	360
caacatattt ggggatttgg gggcgatagc cctactttga attgaaaaca atttgagggt	420
taactgcttg caaactgtca tgggtctcag tctccaacct ctgtggactg taggggagtc	480

aggcaccatt tggcctcctc cccagctctg tgatgtgctg cttctctaga ctgcaggcac 540

cacctgtgtg aaccggac atg aaa ctg gtg tgg cct agt gcc aag ctg ttg 591
Met Lys Leu Val Trp Pro Ser Ala Lys Leu Leu
1 5

cag gca gct gca ggt gca tct gcc cgg gcc tgt gac tct gtc acc agc 639
Gln Ala Ala Ala Gly Ala Ser Ala Arg Ala Cys Asp Ser Val Thr Ser
12 17 22 27

aat gta ctg cct tta ctg ctg gaa cag ttc cac aag cac agt cag agc 687
Asn Val Leu Pro Leu Leu Leu Glu Gln Phe His Lys His Ser Gln Ser
28 33 38 43

agc cag cgg cgg aca atc ctt gaa atg ctc ctg ggt ttc ttg aag ctg 735
Ser Gln Arg Arg Thr Ile Leu Glu Met Leu Leu Gly Phe Leu Lys Leu
44 49 54 59

cag cag aaa tgg agc tat gaa gac aaa gat caa agg cct ctg aat ggc 783
Gln Gln Lys Trp Ser Tyr Glu Asp Lys Asp Gln Arg Pro Leu Asn Gly
60 65 70 75

ttc aag gac cag ctg tgc tca ctg gta ttc atg gct cta aca gac ccc 831
Phe Lys Asp Gln Leu Cys Ser Leu Val Phe Met Ala Leu Thr Asp Pro
76 81 86 91

agc acc cag ctt cag ctt gtt ggc atc cgt aca ctg aca gtc ttg ggt 879
Ser Thr Gln Leu Gln Leu Val Gly Ile Arg Thr Leu Thr Val Leu Gly
92 97 102 107

gcc cag cca gat ctc cta tct tat gag gac ttg gag ctg gca gtg ggt 927
Ala Gln Pro Asp Leu Leu Ser Tyr Glu Asp Leu Glu Leu Ala Val Gly
108 113 118 123

cac ctg tac aga ctg agc ttc ctg aag gag gat tcc cag agt tgc agg 975
His Leu Tyr Arg Leu Ser Phe Leu Lys Glu Asp Ser Gln Ser Cys Arg
124 129 134 139

gtg gca gca ctg gaa gca tca gga acc ctg gct gct ctc tac cct gtg 1023
Val Ala Ala Leu Glu Ala Ser Gly Thr Leu Ala Ala Leu Tyr Pro Val
140 145 150 155

gcc ttc agc agc cac ctc gta ccc aag ctc gct gag gag ctg cgt gta 1071
Ala Phe Ser Ser His Leu Val Pro Lys Leu Ala Glu Glu Leu Arg Val
156 161 166 171

ggg gag tca aat ttg act aac gga gat gag ccc acc caa tgc tcc cgg 1119
Gly Glu Ser Asn Leu Thr Asn Gly Asp Glu Pro Thr Gln Cys Ser Arg
172 177 182 187

cat ctg tgc tgt ctg caa gcc ttg tca gct gta tca aca cat ccc agc 1167
His Leu Cys Cys Leu Gln Ala Leu Ser Ala Val Ser Thr His Pro Ser
188 193 198 203

atc gtc aag gag aca ctg cct ctg ctg ctg cag cat ctc tgg caa gtg 1215
Ile Val Lys Glu Thr Leu Pro Leu Leu Leu Gln His Leu Trp Gln Val
204 209 214 219

aac aga ggg aat atg gtt gca caa tcc agt gac gtt att gct gtc tgt	1263
Asn Arg Gly Asn Met Val Ala Gln Ser Ser Asp Val Ile Ala Val Cys	
220 225 230 235	
cag agc ctc aga cag atg gca gaa aaa tgt cag cag gac cct gag agt	1311
Gln Ser Leu Arg Gln Met Ala Glu Lys Cys Gln Gln Asp Pro Glu Ser	
236 241 246 251	
tgc tgg tat ttc cac cag aca gct ata cct tgc ctg ctt gcc ttg gct	1359
Cys Trp Tyr Phe His Gln Thr Ala Ile Pro Cys Leu Leu Ala Leu Ala	
252 257 262 267	
gtg cag gcc tct atg cca gag aag gag ccc tca gtt ctg aga aaa gta	1407
Val Gln Ala Ser Met Pro Glu Lys Glu Pro Ser Val Leu Arg Lys Val	
268 273 278 283	
cta ttg gag gat gag gtg ttg gct gcc atg gtg tct gtc att ggc act	1455
Leu Leu Glu Asp Glu Val Leu Ala Ala Met Val Ser Val Ile Gly Thr	
284 289 294 299	
gct aca acc cac ctg agc cct gag tta gct gcc cag agt gtg aca cac	1503
Ala Thr Thr His Leu Ser Pro Glu Leu Ala Ala Gln Ser Val Thr His	
300 305 310 315	
att gtg ccc ctc ttc ttg gat ggc aac gtg tcc ttt ctg cct gaa aac	1551
Ile Val Pro Leu Phe Leu Asp Gly Asn Val Ser Phe Leu Pro Glu Asn	
316 321 326 331	
agc ttc ccg agc aga ttc cag cca ttc cag gat ggc tcc tca ggg cag	1599
Ser Phe Pro Ser Arg Phe Gln Pro Phe Gln Asp Gly Ser Ser Gly Gln	
332 337 342 347	
agg cgg ctg att gca ctg ctt atg gcc ttt gtc tgc tcc ctg cct cga	1647
Arg Arg Leu Ile Ala Leu Leu Met Ala Phe Val Cys Ser Leu Pro Arg	
348 353 358 363	
aat gta agt gag cac att tgg gaa gta ctg tta ttt aac ctt gac aag	1695
Asn Val Ser Glu His Ile Trp Glu Val Leu Phe Asn Leu Asp Lys	
364 369 374 379	
gtg act ccg ggc tga aatttgccac aggctaagct gatcttttac ttccccacc	1750
Val Thr Pro Gly *	
380	
agagaagtta gttctcatcc gtcccggtcc ctgctgccac tatgtactgg ttctcttgga	1810
gttcaagtcg gacgcgtggg tcgacgtnaa ttccggagag ggac	1854

<210> 993
 <211> 357
 <212> DNA
 <213> Homo sapiens

Species	Sex	Age	Weight (g)	Length (mm)	Wing (mm)	Tail (mm)	Culmen (mm)	Tarsus (mm)	Middle toe (mm)	Claw (mm)
1. <i>Alcedo</i>	♂	Ad.	11.5	110	65	45	15	25	15	5
2. <i>Alcedo</i>	♀	Ad.	10.5	105	60	40	14	24	14	4
3. <i>Alcedo</i>	♂	Ad.	12.0	115	68	48	16	26	16	6
4. <i>Alcedo</i>	♀	Ad.	11.0	108	62	42	14	24	14	4
5. <i>Alcedo</i>	♂	Ad.	13.0	120	70	50	18	28	18	8
6. <i>Alcedo</i>	♀	Ad.	12.5	118	68	48	16	26	16	6
7. <i>Alcedo</i>	♂	Ad.	11.8	112	64	44	15	25	15	5
8. <i>Alcedo</i>	♀	Ad.	10.8	106	60	40	14	24	14	4
9. <i>Alcedo</i>	♂	Ad.	12.2	116	66	46	16	26	16	6
10. <i>Alcedo</i>	♀	Ad.	11.2	110	62	42	14	24	14	4

[illegible][illegible][illegible]

Species	Sex	Age	Weight (g)	Length (mm)	Wing (mm)	Tail (mm)	Culmen (mm)	Gape (mm)	Bill (mm)	Foot (mm)	Middle toe (mm)	Claw (mm)
1. <i>Alcedo</i>	♂	Ad	11.5	110	65	45	15	10	25	15	10	5
2. <i>Alcedo</i>	♀	Ad	10.5	105	60	40	14	9	24	14	9	4
3. <i>Alcedo</i>	♂	Ad	12.0	115	68	48	16	11	26	16	11	6
4. <i>Alcedo</i>	♀	Ad	11.0	108	62	42	14	10	25	15	10	5
5. <i>Alcedo</i>	♂	Ad	13.0	120	70	50	17	12	28	17	12	7
6. <i>Alcedo</i>	♀	Ad	12.5	118	68	48	16	11	27	16	11	6
7. <i>Alcedo</i>	♂	Ad	14.0	125	72	52	18	13	30	18	13	8
8. <i>Alcedo</i>	♀	Ad	13.5	122	70	50	17	12	29	17	12	7
9. <i>Alcedo</i>	♂	Ad	15.0	130	75	55	19	14	32	19	14	9
10. <i>Alcedo</i>	♀	Ad	14.5	128	73	53	18	13	31	18	13	8

7	12	17	22	
att ttc agc gcc tgc gcg ccc gct tcg agc gcg gta aag gct tcg gtc				388
Ile Phe Ser Ala Cys Ala Pro Ala Ser Ser Ala Val Lys Ala Ser Val				
23	28	33	38	

tcc gtc gcg cag ccg ggg cag gcg gtc atc ccg tag cccccgcgcc ggc	437
Ser Val Ala Gln Pro Gly Gln Ala Val Ile Pro *	
39	44
	49

<210> 995
 <211> 1714
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (147) .. (1136)

accggaccgg aattcccggg tcgacgattt cgtccaagga gtgccccgga tgtgcccagc	60
tggtttcttg cccacccct cgggcctttg ggctggacca gccacctctg cctgagacct	120
ccggtcgccg caagaagctg gagagg atg tac agc gtt gac cgt gtg tct gac	173
Met Tyr Ser Val Asp Arg Val Ser Asp	
1 5	
gac atc cct att cgt acc tgg ttc ccc aag gaa aat ctt ttc agc ttc	221
Asp Ile Pro Ile Arg Thr Trp Phe Pro Lys Glu Asn Leu Phe Ser Phe	
10 15 20 25	
cag aca gca acc aca act atg caa gcc atc tcg gtg ttc agg ggc tac	269
Gln Thr Ala Thr Thr Thr Met Gln Ala Ile Ser Val Phe Arg Gly Tyr	
26 31 36 41	
gcg gag agg aag cgc cgg aaa cgg gag aat gat tcc gcg tct gta atc	317
Ala Glu Arg Lys Arg Arg Lys Arg Glu Asn Asp Ser Ala Ser Val Ile	
42 47 52 57	
cag agg aac ttc cgc aaa cac ctg cgc atg gtc ggc agc cgg agg gtg	365
Gln Arg Asn Phe Arg Lys His Leu Arg Met Val Gly Ser Arg Arg Val	
58 63 68 73	
aag gcc cag acg ttc gct gag cgg cgc gag cgg agc ttc agc cgg tcc	413
Lys Ala Gln Thr Phe Ala Glu Arg Arg Glu Arg Ser Phe Ser Arg Ser	
74 79 84 89	
tgg agc gac ccc acc ccc atg aaa gcc gac act tcc cac gac tcc cga	461
Trp Ser Asp Pro Thr Pro Met Lys Ala Asp Thr Ser His Asp Ser Arg	
90 95 100 105	
gac agc agt gac ctg cag agc tcc cac tgc acg ctg gac gag gcc ttc	509

Asp Ser Ser Asp Leu Gln Ser Ser His Cys Thr Leu Asp Glu Ala Phe	
106 111 116 121	
gag gac ctg gac tgg gac act gag aag ggc ctg gag gct gtg gcc tgc	557
Glu Asp Leu Asp Trp Asp Thr Glu Lys Gly Leu Glu Ala Val Ala Cys	
122 127 132 137	
gac acc gaa ggc ttc gtg cca cca aag gtc atg ctc att tcc tcc aag	605
Asp Thr Glu Gly Phe Val Pro Pro Lys Val Met Leu Ile Ser Ser Lys	
138 143 148 153	
gtg ccc aag gct gag tac atc ccc act atc atc cgc cgg gat gac ccc	653
Val Pro Lys Ala Glu Tyr Ile Pro Thr Ile Ile Arg Arg Asp Asp Pro	
154 159 164 169	
tcc atc atc ccc atc ctc tac gac cat gag cac gca acc ttc gag gac	701
Ser Ile Ile Pro Ile Leu Tyr Asp His Glu His Ala Thr Phe Glu Asp	
170 175 180 185	
atc ctt gag gag ata gag agg aag ctg aac gtc tac cac aag gga gcc	749
Ile Leu Glu Glu Ile Glu Arg Lys Leu Asn Val Tyr His Lys Gly Ala	
186 191 196 201	
aag atc tgg aaa atg ctg att ttc tgc cag gga ggt cct gga cac ctc	797
Lys Ile Trp Lys Met Leu Ile Phe Cys Gln Gly Gly Pro Gly His Leu	
202 207 212 217	
tat ctc ctc aag aac aag gtg gcc acc ttt gcc aaa gtg gag aag gaa	845
Tyr Leu Leu Lys Asn Lys Val Ala Thr Phe Ala Lys Val Glu Lys Glu	
218 223 228 233	
gag gac atg att cac ttc tgg aag cgg ctg agc cgc ctg atg agc aaa	893
Glu Asp Met Ile His Phe Trp Lys Arg Leu Ser Arg Leu Met Ser Lys	
234 239 244 249	
gtg aac cca gag ccg aac gtc atc cac atc atg ggc tgc tac att ctg	941
Val Asn Pro Glu Pro Asn Val Ile His Ile Met Gly Cys Tyr Ile Leu	
250 255 260 265	
ggg aac ccc aat gga gag aag ctg ttc cag aac ctc agg acc ctc atg	989
Gly Asn Pro Asn Gly Glu Lys Leu Phe Gln Asn Leu Arg Thr Leu Met	
266 271 276 281	
act cct tat agg gtc acc ttc gag tca ccc ctg gag ctc tca gcc caa	1037
Thr Pro Tyr Arg Val Thr Phe Glu Ser Pro Leu Glu Leu Ser Ala Gln	
282 287 292 297	
ggg aag cag atg atc gag acg tac ttt gac ttc cgg ttg tat cgc ctg	1085
Gly Lys Gln Met Ile Glu Thr Tyr Phe Asp Phe Arg Leu Tyr Arg Leu	
298 303 308 313	
tgg aag agc cgc cag cac tcg aag ctg ctg gac ttt gac gac gtc ctg	1133
Trp Lys Ser Arg Gln His Ser Lys Leu Leu Asp Phe Asp Asp Val Leu	
314 319 324 329	
tga gggg cagaggcctc cgcccagtca ccatacaggcc actccctctg caccgggacc	1190
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330

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tggggctggg ccgcctcgtg ctccccggga ctgtgtggct ccggtctcgc ctggagccac 1250
ttcagggcac ctcagacgtt gctcaggttc cccctgtggg ttccggtcct cgctgcaccc 1310
gtggccgcag aggctgcagt ccctgggggc cgggaggatc ccgccctgtg gcccgtggat 1370
gctcagcggc caggcactga cctgccatgc ctcgcctgga ggctcagctg tgggcatccc 1430
tccatgggggt tcatagaaat aagtgaatt tctacacccc cgaaacaatt caaaggggag 1490
cagcatttct tgtaactag ttaagcacta tgctgctagt tagagtgtag gcaccccggc 1550
ccagcagccc agcagccac atgtgttcag gcccccttg tgcagagcca ggggtctgag 1610
ggcacctggc tgtgttccca gctgagggag ggctggggcg ggggcccggc ttggaacgat 1670
gtacgatacc ctcatagtga ccattaaacc tgatcctccc ccgc 1714

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<210> 996
<211> 1793
<212> DNA
<213> Homo sapiens

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<220>
<221> CDS
<222> (142)..(1017)

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<220>
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<222> (1)...(1793)
<223> n = a,t,c or g

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gtgccctctc ctactcctca ccgcgcgagc gcggggaacc agtagccgcg gctgcttcgg 120
ttgccgcggg cggtggctgt t atg gat tct cca tgg gac gag ttg gct ctg 171
                        Met Asp Ser Pro Trp Asp Glu Leu Ala Leu
                        1                      5

gcc ttc tcc cgc acg tcc atg ttt ccc ttt ttt gac atc gcg cac tat 219
Ala Phe Ser Arg Thr Ser Met Phe Pro Phe Phe Asp Ile Ala His Tyr
 11                      16                      21                      26

cta gtg tca gtg atg gcg gtg aaa cgt cag ccg gga gca gct gca ttg 267
Leu Val Ser Val Met Ala Val Lys Arg Gln Pro Gly Ala Ala Ala Leu
 27                      32                      37                      42

gca tgg aag aat cct att tca agc tgg ttt act gct atg ctc cac tgt 315
Ala Trp Lys Asn Pro Ile Ser Ser Trp Phe Thr Ala Met Leu His Cys
 43                      48                      53                      58

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ttt ggt gga gga att tta tcc tgt cta ctg ctt gca gag cct cca ttg	363
Phe Gly Gly Gly Ile Leu Ser Cys Leu Leu Leu Ala Glu Pro Pro Leu	
59 64 69 74	
aag ttt ctt gca aac cac act aac ata tta ctg gca tct tca atc tgg	411
Lys Phe Leu Ala Asn His Thr Asn Ile Leu Leu Ala Ser Ser Ile Trp	
75 80 85 90	
tat att aca ttt ttt tgc ccg cat gac cta gtt tcc cag ggc tat tca	459
Tyr Ile Thr Phe Phe Cys Pro His Asp Leu Val Ser Gln Gly Tyr Ser	
91 96 101 106	
tat cta cct gtt caa cta ctg gct tcg gga atg aag gaa gtg acc aga	507
Tyr Leu Pro Val Gln Leu Leu Ala Ser Gly Met Lys Glu Val Thr Arg	
107 112 117 122	
act tgg aaa ata gta ggt gga gtc aca cat gct aat agc tat tac aaa	555
Thr Trp Lys Ile Val Gly Gly Val Thr His Ala Asn Ser Tyr Tyr Lys	
123 128 133 138	
aat ggc tgg ata gtc atg ata gct att gga tgg gcc cga ggt gca ggt	603
Asn Gly Trp Ile Val Met Ile Ala Ile Gly Trp Ala Arg Gly Ala Gly	
139 144 149 154	
ggg acc att ata acg aat ttt gag agg ttg gta aaa gga gat tgg aaa	651
Gly Thr Ile Ile Thr Asn Phe Glu Arg Leu Val Lys Gly Asp Trp Lys	
155 160 165 170	
cca gaa ggt gat gaa tgg ctg aag atg tca tac cct gcc aag gta acc	699
Pro Glu Gly Asp Glu Trp Leu Lys Met Ser Tyr Pro Ala Lys Val Thr	
171 176 181 186	
ctg ctg ggg tca gtt atc ttc aca ttc cag cac acc cag cat ctg gca	747
Leu Leu Gly Ser Val Ile Phe Thr Phe Gln His Thr Gln His Leu Ala	
187 192 197 202	
ata tca aag cat aat ctt atg ttc ctt tat acc atc ttt att gtg gcc	795
Ile Ser Lys His Asn Leu Met Phe Leu Tyr Thr Ile Phe Ile Val Ala	
203 208 213 218	
aca aag ata acc atg atg act aca cag act tct act atg aca ttt gct	843
Thr Lys Ile Thr Met Met Thr Thr Gln Thr Ser Thr Met Thr Phe Ala	
219 224 229 234	
cct ttt gag gat aca ttg agt tgg atg cta ttt ggc tgg cag cag ccg	891
Pro Phe Glu Asp Thr Leu Ser Trp Met Leu Phe Gly Trp Gln Gln Pro	
235 240 245 250	
ttt tca tca tgt gag aag aaa agt gaa gca aag tca cct tcc aat ggc	939
Phe Ser Ser Cys Glu Lys Lys Ser Glu Ala Lys Ser Pro Ser Asn Gly	
251 256 261 266	
gtt ggg tca ttg gcc tca aag ccg gta gat gtt gcc tca gat aat gtt	987
Val Gly Ser Leu Ala Ser Lys Pro Val Asp Val Ala Ser Asp Asn Val	
267 272 277 282	

aaa aag aaa cat act aag aag aat gaa taa a ttacgtgat gagctctaca 1038
 Lys Lys Lys His Thr Lys Lys Asn Glu *
 283 288

aggccaaaaa ttttttttct tatctacctg ttatattgtg ctaatttttc tatgtatgtg 1098
 atgtgaaatg aagactatat atatggaatg gaggtgacag aaagaaagaa attccttgtt 1158
 tgaggagagac ttcccccttc tggattgtat ttgtagagtg ttacgagtgt atcatgtgat 1218
 tatgctttac cggtataaga gattctgttg tgattatttg aatagtttta tattaataaa 1278
 agaagacaaa attttttaaa tgtagaaaa agcagatctg tcattgcaaa gtaacaaaaa 1338
 ttttaagctt ttaaaaatgt agatttttca tatttttaaa atttgaatct atttgagctt 1398
 tagttcagca gaattaaatt ttacttgac attatcatta aaattgctag gtatggagaa 1458
 caattcctat tttattttga aactgagaa gagtaactt ttcctaaaac actttatatt 1518
 ataaatgaaa ataaattgct agtttatatt ttagatataa acatcatatt ttttattaat 1578
 acctacatca aatggaaaat atctgaaatt tttttccat agcaggtatt tntactaga 1638
 ngtagttttn ctacttttnc tttagaacag agtatgagtc ttaatctgaa gtctttttca 1698
 tgcccttggt ttaaaaaaac tacttttttc ggcctcaaaa aaaatcaagg gtggaattt 1758
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<210> 997
 <211> 1679
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (521) .. (1330)

<220>
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 <222> (1) ... (1679)
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 gccagttcct tggatatatc cacgggcttt gctttgagaa ggaactgagt aggcagtgag 180
 aagagtcgag tgaagcctgg cccgtgagtg cctcaacaac tgagatgaac gtcgactcgc 240
 ttgcaggcaa gttgtcactc agcagcgatc tgaactatat cctgggttcc agaaaaggca 300

gaggttctta ccgaaagcag gggaggaagc cgcagcccaa ggaggtcgtc acttgccggg 360
aaggtggctc gggccaggct gcactcaaaa cccgtgctct gtccacactg ctacggggcc 420
agagccaagg aagcttccac ttcttcccc agacagcccc aacagcggct accccaagga 480
gccagcagcc ttgtgtcctg ggatccccag cccctgcaga atg acc cac cag gat 535
Met Thr His Gln Asp
1
ctg agc atc aca gcc aaa ctc atc aat gga ggt gta gca ggg ctc gtg 583
Leu Ser Ile Thr Ala Lys Leu Ile Asn Gly Gly Val Ala Gly Leu Val
6 11 16 21
ggg gtg acc tgc gtg ttc ccc atc gac ttg gcc aag act cgc ctg cag 631
Gly Val Thr Cys Val Phe Pro Ile Asp Leu Ala Lys Thr Arg Leu Gln
22 27 32 37
aac cag cat ggg aaa gcc atg tac aaa gga atg atc gac tgc ctg atg 679
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Lys Thr Ala Arg Ala Glu Gly Phe Phe Gly Met Tyr Arg Gly Ala Ala
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Val Asn Leu Thr Leu Val Thr Pro Glu Lys Ala Ile Lys Leu Ala Ala
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Leu Lys Met Glu Met Leu Ala Gly Cys Gly Ala Gly Met Cys Gln Val
102 107 112 117
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Val Val Thr Cys Pro Met Glu Met Leu Lys Ile Gln Leu Gln Asp Ala
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Gly Arg Leu Ala Val His His Gln Gly Ser Ala Ser Ala Pro Ser Thr
134 139 144 149
tcc agg tcc tac aca act ggt tgc gct tcc acc cac agg cgc ccc tct 1015
Ser Arg Ser Tyr Thr Thr Gly Ser Ala Ser Thr His Arg Arg Pro Ser
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gcc acc ctc att gcc tgg gag ctg ctc cgc act cag ggc ctg gct ggg 1063
Ala Thr Leu Ile Ala Trp Glu Leu Leu Arg Thr Gln Gly Leu Ala Gly
166 171 176 181
ctc tac agg ggc ctg ggt gcc act ctc ctc aga gac att cct ttc tcc 1111
Leu Tyr Arg Gly Leu Gly Ala Thr Leu Leu Arg Asp Ile Pro Phe Ser

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Ile Ile Tyr Phe Pro Leu Phe Ala Asn Leu Asn Asn Leu Gly Phe Asn				
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Glu Leu Ala Gly Lys Ala Ser Phe Ala His Ser Phe Val Ser Gly Cys				
214	219	224	229	
gtg gca ggt tcc ata gct gcg gtc gca gtg acg cct cta gat gtt ctg				1255
Val Ala Gly Ser Ile Ala Ala Val Ala Val Thr Pro Leu Asp Val Leu				
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aaa act cga atc caa acc ctc aag aaa ggc ctg ggc gag gac atg tac				1303
Lys Thr Arg Ile Gln Thr Leu Lys Lys Gly Leu Gly Glu Asp Met Tyr				
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Ser Val Val Gly Phe Leu Ser Gln Arg Gly Leu His Gly Asp Pro Leu	
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Leu Thr Gln Asp Phe Gln Arg Arg Arg Leu Arg Gly Cys Arg Asn Leu	
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Tyr Lys Lys Asp Leu Leu Gly His Phe Gly Cys Val Asn Ala Ile Glu	
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Phe Ser Asn Asn Gly Gly Gln Trp Leu Val Ser Gly Gly Asp Asp Arg	
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cgg gtt ctg cta tgg cac atg gaa caa gcc atc cac tcc agg gtc aag	351
Arg Val Leu Leu Trp His Met Glu Gln Ala Ile His Ser Arg Val Lys	
77 82 87 92	
ccc ata cag ctg aaa gga gag cac cat tcc aac att ttt tgc ctg gct	399
Pro Ile Gln Leu Lys Gly Glu His His Ser Asn Ile Phe Cys Leu Ala	
93 98 103 108	
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Phe Asn Ser Gly Asn Thr Lys Val Phe Ser Gly Gly Asn Asp Glu Gln	
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gtt atc ctc cat gat gtt gaa agc agt gag aca ttg gac gtg ttt gct	495
Val Ile Leu His Asp Val Glu Ser Ser Glu Thr Leu Asp Val Phe Ala	
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His Glu Asp Ala Val Tyr Gly Leu Ser Val Ser Pro Val Asn Asp Asn	
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Ile Phe Ala Ser Ser Ser Asp Asp Gly Arg Val Leu Ile Trp Asp Ile	
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Arg Glu Ser Pro His Gly Glu Pro Phe Cys Leu Ala Asn Tyr Pro Ser	
173 178 183 188	
gcc ttt cat agt gtc atg ttt aac cct gtg gag ccc agg ttg ttg gcc	687
Ala Phe His Ser Val Met Phe Asn Pro Val Glu Pro Arg Leu Leu Ala	
189 194 199 204	
aca gcc aat tca aag gaa gga gtg gga ctc tgg gac att cga aaa cct	735
Thr Ala Asn Ser Lys Glu Gly Val Gly Leu Trp Asp Ile Arg Lys Pro	
205 210 215 220	
cag agt tct ctc ctg cgc tat ggt gga aac ctg tcc ctc caa agt gcc	783
Gln Ser Ser Leu Leu Arg Tyr Gly Gly Asn Leu Ser Leu Gln Ser Ala	
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Met Ser Val Arg Phe Asn Ser Asn Gly Thr Gln Leu Leu Ala Leu Arg	
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Arg Arg Leu Pro Pro Val Leu Tyr Asp Ile His Ser Arg Leu Pro Val	
253 258 263 268	
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Phe Gln Phe Asp Asn Gln Gly Tyr Phe Asn Ser Cys Thr Met Lys Ser	
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Cys Cys Phe Ala Gly Asp Arg Asp Gln Tyr Ile Leu Ser Gly Ser Asp	
285 290 295 300	
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Asp Phe Asn Leu Tyr Met Trp Arg Ile Pro Ala Asp Pro Glu Ala Gly	
301 306 311 316	
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Gly Ile Gly Arg Val Val Asn Gly Ala Phe Met Val Leu Lys Gly His	
317 322 327 332	
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Arg Ser Ile Val Asn Gln Val Arg Phe Asn Pro His Thr Tyr Met Ile	
333 338 343 348	
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Cys Ser Ser Gly Val Glu Lys Ile Ile Lys Ile Trp Ser Pro Tyr Lys	
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Gln Pro Gly Cys Thr Gly Asp Leu Asp Gly Arg Ile Glu Asp Asp Ser	
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Arg Cys Leu Tyr Thr His Glu Glu Tyr Ile Ser Leu Val Leu Asn Ser	
381 386 391 396	
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Gly Ser Gly Leu Ser His Asp Tyr Ala Asn Gln Ser Val Gln Glu Asp	
397 402 407 412	
ccc cgg atg atg gcc ttc ttt gac tca ctg gta cgc cga gag atc gag	1359
Pro Arg Met Met Ala Phe Phe Asp Ser Leu Val Arg Arg Glu Ile Glu	
413 418 423 428	
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Gly Trp Ser Ser Asp Ser Asp Ser Asp Leu Ser Glu Ser Thr Ile Leu	
429 434 439 444	
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Gln Leu His Ala Gly Val Ser Glu Arg Ser Gly Tyr Thr Asp Ser Glu	
445 450 455 460	
tct tcg gcc tca ttg cct cgc tcc ccg cct ccc aca gta gat gag tct	1503

Ser	Ser	Ala	Ser	Leu	Pro	Arg	Ser	Pro	Pro	Pro	Thr	Val	Asp	Glu	Ser	
461					466					471					476	
gcc	gac	aac	gcc	ttc	cac	ctg	ggg	ccc	ctg	cgg	gtc	acc	acc	aca	aac	1551
Ala	Asp	Asn	Ala	Phe	His	Leu	Gly	Pro	Leu	Arg	Val	Thr	Thr	Thr	Asn	
477					482					487					492	
aca	gta	gcc	tca	act	cca	cca	aca	ccc	acg	tgt	gag	gat	gca	gcc	tct	1599
Thr	Val	Ala	Ser	Thr	Pro	Pro	Thr	Pro	Thr	Cys	Glu	Asp	Ala	Ala	Ser	
493					498					503					508	
cgc	cag	cag	cgt	ctg	tct	gct	ctg	cgg	cgc	tac	caa	gac	aaa	cgc	ctc	1647
Arg	Gln	Gln	Arg	Leu	Ser	Ala	Leu	Arg	Arg	Tyr	Gln	Asp	Lys	Arg	Leu	
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ctg	gcc	ctt	tcc	aat	gag	tcc	gat	tct	gag	gag	aat	gtc	tgt	gag	gtg	1695
Leu	Ala	Leu	Ser	Asn	Glu	Ser	Asp	Ser	Glu	Glu	Asn	Val	Cys	Glu	Val	
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gaa	cta	gac	aca	gat	ctc	ttt	ccc	cgg	cca	cgg	tca	ccc	agc	ccc	gaa	1743
Glu	Leu	Asp	Thr	Asp	Leu	Phe	Pro	Arg	Pro	Arg	Ser	Pro	Ser	Pro	Glu	
541					546					551					556	
gat	gaa	tcc	agc	agt	tcc	agc	agc	tct	agc	agc	tct	gag	gat	gag	gag	1791
Asp	Glu	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Glu	Asp	Glu	Glu	
557					562					567					572	
gag	ctg	aat	gaa	cgc	cga	gcc	tct	acc	tgg	cag	cgg	aat	gcc	atg	cgg	1839
Glu	Leu	Asn	Glu	Arg	Arg	Ala	Ser	Thr	Trp	Gln	Arg	Asn	Ala	Met	Arg	
573					578					583					588	
cgc	cga	cag	aag	aca	acc	cga	gaa	gac	aag	ccc	agt	gcc	cca	atc	aag	1887
Arg	Arg	Gln	Lys	Thr	Thr	Arg	Glu	Asp	Lys	Pro	Ser	Ala	Pro	Ile	Lys	
589					594					599					604	
ccc	acc	aac	act	tac	att	gga	gaa	gac	aac	tat	gat	tac	ccc	cag	atc	1935
Pro	Thr	Asn	Thr	Tyr	Ile	Gly	Glu	Asp	Asn	Tyr	Asp	Tyr	Pro	Gln	Ile	
605					610					615					620	
aaa	gtg	gat	gac	ctc	tcc	tcc	tcc	cca	acc	tgc	tcc	cct	gag	cgg	agc	1983
Lys	Val	Asp	Asp	Leu	Ser	Ser	Ser	Pro	Thr	Ser	Ser	Pro	Glu	Arg	Ser	
621					626					631					636	
act	tcc	acg	cta	gag	att	caa	cca	agc	cgg	gca	tca	cca	act	tct	gac	2031
Thr	Ser	Thr	Leu	Glu	Ile	Gln	Pro	Ser	Arg	Ala	Ser	Pro	Thr	Ser	Asp	
637					642					647					652	
ata	gaa	tca	gtt	gag	cga	aaa	att	tat	aaa	gct	tac	aag	tgg	ctc	cgc	2079
Ile	Glu	Ser	Val	Glu	Arg	Lys	Ile	Tyr	Lys	Ala	Tyr	Lys	Trp	Leu	Arg	
653					658					663					668	
tac	tct	tat	atc	tcc	tac	tca	aat	aac	aaa	gat	gga	gag	acc	tcc	ttg	2127
Tyr	Ser	Tyr	Ile	Ser	Tyr	Ser	Asn	Asn	Lys	Asp	Gly	Glu	Thr	Ser	Leu	
669					674					679					684	
gtg	acc	ggg	gag	gca	gat	gaa	ggg	aga	gca	gga	acc	agc	cac	aaa	gac	2175
Val	Thr	Gly	Glu	Ala	Asp	Glu	Gly	Arg	Ala	Gly	Thr	Ser	His	Lys	Asp	

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Asn Pro Ala Pro Ser Ser Ser Lys Glu Ala Cys Leu Asn Ile Ala Met				
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Ala Gln Arg Asn Gln Asp Leu Pro Pro Glu Gly Cys Ser Lys Asp Thr				
717	722	727	732	
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Phe Lys Glu Glu Thr Pro Arg Thr Pro Ser Asn Gly Pro Gly His Glu				
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cac agc agc cat gct tgg gca gag gtg cca gag ggt acc tct cag gac				2367
His Ser Ser His Ala Trp Ala Glu Val Pro Glu Gly Thr Ser Gln Asp				
749	754	759	764	
act ggc aat agc ggc tct gta gag cac cct ttt gaa acc aag aag ctc				2415
Thr Gly Asn Ser Gly Ser Val Glu His Pro Phe Glu Thr Lys Lys Leu				
765	770	775	780	
aat gga aag gcc ctg agc agt cgg gct gag gag ccg cct tct cct cct				2463
Asn Gly Lys Ala Leu Ser Ser Arg Ala Glu Glu Pro Pro Ser Pro Pro				
781	786	791	796	
gtc ccc aag gca tct ggc tcc act ctc aac agc ggg tct ggc aac tgt				2511
Val Pro Lys Ala Ser Gly Ser Thr Leu Asn Ser Gly Ser Gly Asn Cys				
797	802	807	812	
ccc agg acc cag tct gat gac agt gag gag agg agc ctc gaa acc atc				2559
Pro Arg Thr Gln Ser Asp Asp Ser Glu Glu Arg Ser Leu Glu Thr Ile				
813	818	823	828	
tgt gcc aac cac aac aat gga cgc tta cac cct cgt ccc cct cac cct				2607
Cys Ala Asn His Asn Asn Gly Arg Leu His Pro Arg Pro Pro His Pro				
829	834	839	844	
cac aat aac ggg cag aac ttg ggg gag ctg gag gtg gtg gcc tac tct				2655
His Asn Asn Gly Gln Asn Leu Gly Glu Leu Glu Val Val Ala Tyr Ser				
845	850	855	860	
tcc cca gga cac tca gac act gac cgt gat aac tcg tcc ctg aca ggg				2703
Ser Pro Gly His Ser Asp Thr Asp Arg Asp Asn Ser Ser Leu Thr Gly				
861	866	871	876	
aca ctc cta cac aaa gat tgt tgc ggg tct gaa atg gcc tgt gag acc				2751
Thr Leu Leu His Lys Asp Cys Cys Gly Ser Glu Met Ala Cys Glu Thr				
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ccc aat gct gga aca aga gag gac ccc act gac acc cca gcc aca gat				2799
Pro Asn Ala Gly Thr Arg Glu Asp Pro Thr Asp Thr Pro Ala Thr Asp				
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Ser Ser Arg Ala Val His Gly His Ser Gly Leu Lys Arg Gln Arg Ile				
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Ile Asp Arg Arg Pro Ile Arg Arg Val Arg Ser Lys Ser Asp Thr Pro	
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Val Glu Arg Leu Ala Ala Met Arg Ser Asp Ser Leu Val Pro Gly Thr	
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His Thr Pro Pro Ile Arg Arg Arg Ser Lys Phe Ala Asn Leu Gly Arg	
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Ile Phe Lys Pro Trp Lys Trp Arg Lys Lys Lys Ser Glu Lys Phe Lys	
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121 126 131 136	
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137 142 147 152	
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Ser Asp Ile Met Asp Gly Pro Val Ser Glu Glu Ser Pro Ser Ala Ser	
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Glu Ser Gly Val Leu Leu Ser Gln Asp Pro Ser Ala Lys Pro Val Leu	
185 190 195 200	
cta ctg ccc ccc aaa aaa cct gct gct ttc cct gga gac cat gaa gag	917
Leu Leu Pro Pro Lys Lys Pro Ala Ala Phe Pro Gly Asp His Glu Glu	
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Thr Pro Val Lys Gln Leu Pro Leu Leu Lys Gln Pro Pro Ala Leu Pro	
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Pro Lys Lys Val Met Ile Cys Met Pro Val Gly Gly Pro Asp Leu Ser	
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Cys Cys Asn Glu Leu Phe Lys Lys Lys Lys Lys Lys Lys Glu Glu Glu	
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Glu Glu Lys Arg Arg Glu Lys Asp Ile Trp Gln Cys Leu Lys Ile Val	
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cgc tgc cac gtg tgc acc agc tcc agc aac tgc aag cat tct gtg gtc	96
Arg Cys His Val Cys Thr Ser Ser Ser Asn Cys Lys His Ser Val Val	
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Cys Pro Ala Ser Ser Arg Phe Cys Lys Thr Thr Asn Thr Val Glu Pro	
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Leu Arg Gly Asn Leu Val Lys Lys Asp Cys Ala Glu Ser Cys Thr Pro	
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Cys Cys Gln Glu Asp Leu Cys Asn Glu Lys Leu His Asn Ala Ala Pro	
81 86 91 96	
acc cgc acc gcc ctc gcc cac agt gcc ctc agc ctg ggg ctg gcc ctg	336
Thr Arg Thr Ala Leu Ala His Ser Ala Leu Ser Leu Gly Leu Ala Leu	
97 102 107 112	
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Ser Leu Leu Ala Val Ile Leu Ala Pro Ser Leu *	
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<213> Homo sapiens

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<221> CDS

<222> (187)..(903)

<220>

<221> misc_feature
 <222> (1)...(1392)
 <223> n = a,t,c or g

<400> 1001

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gaattgctga aagaaaaagt actaccttat tgaaaggatg aagaaacacg aaaagattat    180
gattac      atg ctg gat cat cca gaa gag tac tac agc cat tac tac cac      228
             Met Leu Asp His Pro Glu Glu Tyr Tyr Ser His Tyr Tyr His
             1             5             10

tac tat agc agg cgc ttg gcc cct aag gtg gat gtt aga gta gtg att      276
Tyr Tyr Ser Arg Arg Leu Ala Pro Lys Val Asp Val Arg Val Val Ile
15             20             25             30

ttg gtc agc gtg tgt gct att tcg gtg ttt cag ttt ttc agc tgg tgg      324
Leu Val Ser Val Cys Ala Ile Ser Val Phe Gln Phe Phe Ser Trp Trp
31             36             41             46

aat agc tac aat aag gca atc agc tac cta gcc aca gtg ccc aag tac      372
Asn Ser Tyr Asn Lys Ala Ile Ser Tyr Leu Ala Thr Val Pro Lys Tyr
47             52             57             62

cgt atc caa gct aca gag att gcc aag cag cag gga ctg ctc aaa aaa      420
Arg Ile Gln Ala Thr Glu Ile Ala Lys Gln Gln Gly Leu Leu Lys Lys
63             68             73             78

gcc aaa gaa aaa ggc aaa aac aaa aag tcc aaa gaa gaa att cgt gac      468
Ala Lys Glu Lys Gly Lys Asn Lys Lys Ser Lys Glu Glu Ile Arg Asp
79             84             89             94

gag gag gag aac atc ata aag aac att ata aaa agt aaa ata gat ata      516
Glu Glu Glu Asn Ile Ile Lys Asn Ile Ile Lys Ser Lys Ile Asp Ile
95             100             105             110

aag ggg ggc tat cag aaa ccc caa atc tgt gat ctt ctc ctg ttt caa      564
Lys Gly Gly Tyr Gln Lys Pro Gln Ile Cys Asp Leu Leu Leu Phe Gln
111             116             121             126

att atc tta gct cct ttt cac cta tgc tca tat ata gtt tgg tat tgt      612
Ile Ile Leu Ala Pro Phe His Leu Cys Ser Tyr Ile Val Trp Tyr Cys
127             132             137             142

cgg tgg atc tat aat ttt aac atc aaa ggc aaa gaa tat gga gag gaa      660
Arg Trp Ile Tyr Asn Phe Asn Ile Lys Gly Lys Glu Tyr Gly Glu Glu
143             148             153             158

gag aga tta tac att ata cgt aaa tct atg aag atg tca aag tct caa      708
Glu Arg Leu Tyr Ile Ile Arg Lys Ser Met Lys Met Ser Lys Ser Gln
159             164             169             174

ttt gat agt cta gaa gat cat cag aaa gaa act ttt ctt aaa cga gag      756
Phe Asp Ser Leu Glu Asp His Gln Lys Glu Thr Phe Leu Lys Arg Glu

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175	180	185	190	
ctc tgg atc aag gag aat tat gag gtc tac aag caa gaa caa gag gaa				804
Leu Trp Ile Lys Glu Asn Tyr Glu Val Tyr Lys Gln Glu Gln Glu Glu				
191	196	201	206	
gaa tta aag aaa aag ttg gca aat gac ccc aga tgg aag aga tac agg				852
Glu Leu Lys Lys Lys Leu Ala Asn Asp Pro Arg Trp Lys Arg Tyr Arg				
207	212	217	222	
aga tgg atg aag aat gaa ggg cct ggg cgg tta aca ttt gtg gat gac				900
Arg Trp Met Lys Asn Glu Gly Pro Gly Arg Leu Thr Phe Val Asp Asp				
223	228	233	238	
tga agat tgatggaatg ctactatgcc aaaccttaaat tgtgatatta ttttcataac				957
*				
239				
tgaattatatt tagaaatgta tcaattgact gctgctcagc agtaactaaa attcctcaag				1017
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acatttatga ttgttcaatt ttataatct atttgtggat tttgttaaaa gatttcacat				1137
gaagatttat tagttgcat ttaaaatttt tatatgttta gttaaaagat ttgacatgaa				1197
aatttattag ataccattta aaaattttat gtgttatgtg tttatncttt gagaatgtta				1257
ccttactgtt tgtaatagtg ctacattttt ctgctttcat ggcctctgta ttttcacaaa				1317
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gcagtaggat ggacc				1392

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 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (202) .. (987)

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tgtccatcca ggccagcagc tgaaggagcc tcacctgcct ccttctctg agtagcacgg	180
at ttgaggag aagcagcgaa g atg tcc agc gag cct ccc cct cct tat cct	231
Met Ser Ser Glu Pro Pro Pro Pro Tyr Pro	

1

5

ggg ggc ccc aca gcc cca ctt ctg gaa gag aaa agt gga gcc ccg ccc	279
Gly Gly Pro Thr Ala Pro Leu Leu Glu Glu Lys Ser Gly Ala Pro Pro	
11 16 21 26	
acc cca ggc cgt tcc tcc cca gct gtg atg cag ccc cct cca ggc atg	327
Thr Pro Gly Arg Ser Ser Pro Ala Val Met Gln Pro Pro Pro Gly Met	
27 32 37 42	
cca ctg ccc cct gcg gac att ggc ccc cca ccc tat gag ccg ccg ggt	375
Pro Leu Pro Pro Ala Asp Ile Gly Pro Pro Pro Tyr Glu Pro Pro Gly	
43 48 53 58	
cac cca atg ccc cag cct ggc ttc atc cca cca cac atg agt gca gat	423
His Pro Met Pro Gln Pro Gly Phe Ile Pro Pro His Met Ser Ala Asp	
59 64 69 74	
ggc acc tac atg cct ccg ggt ttc tac cct cct cca ggc ccc cac cca	471
Gly Thr Tyr Met Pro Pro Gly Phe Tyr Pro Pro Pro Gly Pro His Pro	
75 80 85 90	
ccc atg ggc tac tac ccc cca ggg ccc tac acg cca ggg ccc tac cct	519
Pro Met Gly Tyr Tyr Pro Pro Gly Pro Tyr Thr Pro Gly Pro Tyr Pro	
91 96 101 106	
ggc cct ggg ggc cac aca gcc aca gtc ctg gtc cct tca gga gct gcc	567
Gly Pro Gly Gly His Thr Ala Thr Val Leu Val Pro Ser Gly Ala Ala	
107 112 117 122	
acc acg gtg aca gtg ctg cag gga gag atc ttt gag gga gcg cct gtg	615
Thr Thr Val Thr Val Leu Gln Gly Glu Ile Phe Glu Gly Ala Pro Val	
123 128 133 138	
cag acg gtg tgt ccc cac tgc cag cag gcc atc acc acc aag atc tcc	663
Gln Thr Val Cys Pro His Cys Gln Gln Ala Ile Thr Thr Lys Ile Ser	
139 144 149 154	
tac gag att ggc ttg atg aat ttc gtg ctg ggt ttc ttc tgt tgc ttc	711
Tyr Glu Ile Gly Leu Met Asn Phe Val Leu Gly Phe Phe Cys Cys Phe	
155 160 165 170	
atg gga tgt gat ctg ggc tgc tgc ctg atc ccc tgc ctc atc aat gac	759
Met Gly Cys Asp Leu Gly Cys Cys Leu Ile Pro Cys Leu Ile Asn Asp	
171 176 181 186	
ttc aag gat gtg acg cac aca tgc ccc agc tgc aaa gct aca tct aca	807
Phe Lys Asp Val Thr His Thr Cys Pro Ser Cys Lys Ala Thr Ser Thr	
187 192 197 202	
cgt aca agc gcc tgt gct aac gga gct ggg act cgg gac tcc ccc gcc	855
Arg Thr Ser Ala Cys Ala Asn Gly Ala Gly Thr Arg Asp Ser Pro Ala	
203 208 213 218	
tgt cag tct ggc ccc ctg tgc ttt gct ccc tgt gct cag tgg tca ctt	903
Cys Gln Ser Gly Pro Leu Cys Phe Ala Pro Cys Ala Gln Trp Ser Leu	
219 224 229 234	
tcc cgc tcc cac ttg ggg ctg gga gcc gtg cca cca tcc cct aga agt	951

Ser	Arg	Ser	His	Leu	Gly	Leu	Gly	Ala	Val	Pro	Pro	Ser	Pro	Arg	Ser	
235					240					245					250	
cct	gtc	ctc	ttc	acc	ctg	ccc	tac	ctg	agc	cgc	tga	ctct	tctggcaaaa			1001
Pro	Val	Leu	Phe	Thr	Leu	Pro	Tyr	Leu	Ser	Arg	*					
251					256					261						
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gtgttgttgg	tctgcttggt	gtgtgtgatc	gggaagataa	gctgggaggg	gtctcctgct											1121
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ttctgacctg	ctgggccgag	aatgggtaag	ttgtctggag	tcagggtggc	ccacgtagga											1301
cagggtcaca	aagcctgggt	ttgtttctgg	gtactttgcg	cctctggggg	gctagagggtg											1361
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gacactgtac	ctgggtgaat	gatcagacct	tggtagctaa	gaaggaactt	gtccctttga											1541
gtcagtgtgc	agacccctt	tcaggccatg	cctctgtgaa	ccctgtattg	ctggggccgg											1601
aaggagcccc	tgagcctagc	cccttcccgt	ctgccctgtg	tcctcactgc	gtgtgggtat											1661
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gtgggtgcgc	ttggatgtgc	agagccttct	ccatggattt	tcttccctgt	aagtgccggg											1781
cccctcacc	cagctgacag	gctgttgctg	tgctgtctca	cacctgtctc	tgcaggcaca											1841
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cctcgccctg	tctttatttc	ctgaatgggt	tgtgaacttg	ctcacctgga	ccactgtatc											1961
ctgccactgt	ccttcttggt	ctcgactgc	cactgcatgg	cctcctgtca	ctgtgaatcg											2021
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aaaa																2085

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<212> DNA
<213> Homo sapiens

<220> /
<221> CDS
<222> (84) .. (1010)

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<400> 1003

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Met Thr Ala Ser Asn Trp Thr Leu Val	
1 5	
atg gag ggc gag tgg atg ctg aaa ttt tac gcc cca tgg tgt cca tcc	158
Met Glu Gly Glu Trp Met Leu Lys Phe Tyr Ala Pro Trp Cys Pro Ser	
10 15 20 25	
tgc cag cag act gat tca gaa tgg gag gct ttt gca aag aat ggt gaa	206
Cys Gln Gln Thr Asp Ser Glu Trp Glu Ala Phe Ala Lys Asn Gly Glu	
26 31 36 41	
ata ctt cag atc agt gtg ggg aag gta gat gtc att caa gaa cca ggt	254
Ile Leu Gln Ile Ser Val Gly Lys Val Asp Val Ile Gln Glu Pro Gly	
42 47 52 57	
ttg agt ggc cgc ttc ttt gtc acc act ctc cca gca ttt ttt cat gca	302
Leu Ser Gly Arg Phe Phe Val Thr Thr Leu Pro Ala Phe Phe His Ala	
58 63 68 73	
aag gat ggg ata ttc cgc cgt tat cgt ggc cca gga atc ttc gaa gac	350
Lys Asp Gly Ile Phe Arg Arg Tyr Arg Gly Pro Gly Ile Phe Glu Asp	
74 79 84 89	
ctg cag aat tat atc tta gag aag aaa tgg caa tca gtc gag cct ctg	398
Leu Gln Asn Tyr Ile Leu Glu Lys Lys Trp Gln Ser Val Glu Pro Leu	
90 95 100 105	
act ggc tgg aaa tcc ccg gct tct cta acg atg tct gga atg gct ggt	446
Thr Gly Trp Lys Ser Pro Ala Ser Leu Thr Met Ser Gly Met Ala Gly	
106 111 116 121	
ctt ttt agc atc tct ggc aag ata tgg cat ctt cac aac tat ttc aca	494
Leu Phe Ser Ile Ser Gly Lys Ile Trp His Leu His Asn Tyr Phe Thr	
122 127 132 137	
gtg act ctt gga att cct gct tgg tgt tct tat gtc ttt ttc gtc ata	542
Val Thr Leu Gly Ile Pro Ala Trp Cys Ser Tyr Val Phe Phe Val Ile	
138 143 148 153	
gcc acc ttg gtt ttt ggc ctt ttt atg ggt ctg gtc ttg gtg gta ata	590
Ala Thr Leu Val Phe Gly Leu Phe Met Gly Leu Val Leu Val Val Ile	
154 159 164 169	
tca gaa tgt ttc tat gtg cca ctt cca agg cat tta tct gag cgt tct	638
Ser Glu Cys Phe Tyr Val Pro Leu Pro Arg His Leu Ser Glu Arg Ser	
170 175 180 185	
gag cag aat cgg aga tca gag gag gct cat aga gct gaa cag ttg cag	686
Glu Gln Asn Arg Arg Ser Glu Glu Ala His Arg Ala Glu Gln Leu Gln	
186 191 196 201	
gat gcg gag gag gaa aaa gat gat tca aat gaa gaa gaa aac aaa gac	734
Asp Ala Glu Glu Glu Lys Asp Asp Ser Asn Glu Glu Glu Asn Lys Asp	

202	207	212	217	
agc ctt gta gat gat gaa gaa gag aaa gaa gat ctt ggc gat gag gat				782
Ser Leu Val Asp Asp Glu Glu Glu Lys Glu Asp Leu Gly Asp Glu Asp				
218	223	228	233	
gaa gca gag gaa gaa gag gag gag gac aac ttg gct gct ggt gtg gat				830
Glu Ala Glu Glu Glu Glu Glu Glu Asp Asn Leu Ala Ala Gly Val Asp				
234	239	244	249	
gag gag aga agt gag gcc aat gat cag ggg ccc cca gga gag gac ggt				878
Glu Glu Arg Ser Glu Ala Asn Asp Gln Gly Pro Pro Gly Glu Asp Gly				
250	255	260	265	
gtg acc cgg gag gaa gta gag cct gag gag gct gaa gaa ggc atc tct				926
Val Thr Arg Glu Glu Val Glu Pro Glu Glu Ala Glu Glu Gly Ile Ser				
266	271	276	281	
gag caa ccc tgc cca gct gac aca gag gtg gtg gaa gac tcc ttg agg				974
Glu Gln Pro Cys Pro Ala Asp Thr Glu Val Val Glu Asp Ser Leu Arg				
282	287	292	297	
cag cgt aaa agt cag cat gct gac aag gga ctg tag attt aatgatgcgt				1024
Gln Arg Lys Ser Gln His Ala Asp Lys Gly Leu *				
298	303	308		
tttcaagaat acacaccaaaa acaatatgtc agcttccctt tggcctgcag tttgtaccaa				1084
atccttaatt tttcctgaat gagcaagctt ctcttaaaag atgctctcta gtcatttggt				1144
ctcatggcag taagcctcat gtatactaag gagagtcttc caggtgtgac aatcaggata				1204
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acttaggggt cagagagtct cgaccagagg aggccattcc cagtcctaata cagcaccttc				1324
cagagacaag gctgcaggcc ctgtgaaatg aaagccaagc aggagccttg gtccttgagc				1384
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aaggatttta caagacagat taaaaaaaaa ttgttttgtc caaaatatag ttgttggtga				1864
ttttttttta agttttctaa gcaatatttt tcaagccaga agtcctctaa gtcttgccag				1924
tacaaggtag tcttgtgaag aaaagttgaa tactgttttg ttttcatctc aaggggttcc				1984

ctgggtcttg aactacttta ataataacta aaaaaccact tctgattttc cttcagtgat 2044
 gtgcttttgg tgaaagaatt aatgaactcc agtacctgaa agtgaaagat ttgattttgt 2104
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 actgtaagta cccagggagg ctaatttcct taataaaaaa aaatctatcc atctacttct 2224
 ctcttacctg atttatgtgt tagaataaat tcatgaaatt cgattccaag cata 2278

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 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (253)..(1671)

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 actacagtgc ccgccaggtt tgccgacagt gaaaaaaaaa aagtaccgtt ccaaagcagg 180
 agcctaggca gccgagaggg tgcccgaacc tgagtctgag ttgcggccac ttcaggagct 240
 gagaggagca gg atg gaa ctg cag gat cca aag atg aat gga gcc ctc 288
 Met Glu Leu Gln Asp Pro Lys Met Asn Gly Ala Leu
 1 5 10
 cct tcg gat gct gtg ggc tac agg caa gaa cgt gag ggc ttc ctg ccc 336
 Pro Ser Asp Ala Val Gly Tyr Arg Gln Glu Arg Glu Gly Phe Leu Pro
 13 18 23 28
 agt cgt ggt cct gct cct ggg agc aag ccg gtc cag ttc atg gat ttc 384
 Ser Arg Gly Pro Ala Pro Gly Ser Lys Pro Val Gln Phe Met Asp Phe
 29 34 39 44
 gag ggg aag aca tcg ttt gga atg tca gtg ttc aac ctc agc aac gcc 432
 Glu Gly Lys Thr Ser Phe Gly Met Ser Val Phe Asn Leu Ser Asn Ala
 45 50 55 60
 atc atg ggc agc ggc atc ctg ggg ctg gcc tat gcc atg gcc cac acg 480
 Ile Met Gly Ser Gly Ile Leu Gly Leu Ala Tyr Ala Met Ala His Thr
 61 66 71 76
 ggg gtc atc ttc ttc ctg gcc ctg ctg ctg tgc att gcg ctt ctg tcg 528
 Gly Val Ile Phe Phe Leu Ala Leu Leu Leu Cys Ile Ala Leu Leu Ser
 77 82 87 92
 tcc tac tcc atc cac ctc ctg ctg acc tgt gct ggt att gca ggc atc 576

Ser	Tyr	Ser	Ile	His	Leu	Leu	Leu	Thr	Cys	Ala	Gly	Ile	Ala	Gly	Ile		
93					98					103					108		
cga	gcc	tat	gag	cag	ctg	gga	cag	agg	gca	ttc	ggg	cct	gcg	ggg	aag		624
Arg	Ala	Tyr	Glu	Gln	Leu	Gly	Gln	Arg	Ala	Phe	Gly	Pro	Ala	Gly	Lys		
109					114					119					124		
gta	gtg	gtg	gcc	aca	gtc	atc	tgt	ctg	cac	aat	gtt	ggg	gcc	atg	tcc		672
Val	Val	Val	Ala	Thr	Val	Ile	Cys	Leu	His	Asn	Val	Gly	Ala	Met	Ser		
125					130					135					140		
agt	tac	ctg	ttc	atc	atc	aaa	tct	gag	ctc	ccc	ctg	gtt	atc	ggc	acc		720
Ser	Tyr	Leu	Phe	Ile	Ile	Lys	Ser	Glu	Leu	Pro	Leu	Val	Ile	Gly	Thr		
141					146					151					156		
ttc	ctg	tac	atg	gac	ccc	gag	ggg	gac	tgg	ttc	ttg	aag	gga	aac	ctc		768
Phe	Leu	Tyr	Met	Asp	Pro	Glu	Gly	Asp	Trp	Phe	Leu	Lys	Gly	Asn	Leu		
157					162					167					172		
ctc	atc	atc	atc	gtc	agt	gtg	tta	atc	atc	ctg	ccc	ctc	gcc	ctc	atg		816
Leu	Ile	Ile	Ile	Val	Ser	Val	Leu	Ile	Ile	Leu	Pro	Leu	Ala	Leu	Met		
173					178					183					188		
aaa	cac	ttg	ggc	tac	ctg	ggg	tac	acc	agt	ggt	ctc	tct	ctg	acc	tgc		864
Lys	His	Leu	Gly	Tyr	Leu	Gly	Tyr	Thr	Ser	Gly	Leu	Ser	Leu	Thr	Cys		
189					194					199					204		
atg	ctg	ttt	ttc	ctt	gtt	tgc	gtc	atc	tac	aag	aag	ttc	caa	ctt	ggc		912
Met	Leu	Phe	Phe	Leu	Val	Ser	Val	Ile	Tyr	Lys	Lys	Phe	Gln	Leu	Gly		
205					210					215					220		
tgt	gct	ata	ggc	cac	aat	gaa	aca	gca	atg	gag	agt	gaa	gct	ctc	gtg		960
Cys	Ala	Ile	Gly	His	Asn	Glu	Thr	Ala	Met	Glu	Ser	Glu	Ala	Leu	Val		
221					226					231					236		
gga	ctc	ccc	agc	caa	gga	ctc	aac	agc	agc	tgt	gag	gcc	cag	atg	ttc		1008
Gly	Leu	Pro	Ser	Gln	Gly	Leu	Asn	Ser	Ser	Cys	Glu	Ala	Gln	Met	Phe		
237					242					247					252		
aca	gtt	gac	tca	cag	atg	tcc	tac	aca	gtg	ccc	att	atg	gct	ttt	gct		1056
Thr	Val	Asp	Ser	Gln	Met	Ser	Tyr	Thr	Val	Pro	Ile	Met	Ala	Phe	Ala		
253					258					263					268		
ttt	gtc	tgc	cac	cct	gag	gtg	ctg	ccc	atc	tat	acg	gag	ctc	tgc	cgg		1104
Phe	Val	Cys	His	Pro	Glu	Val	Leu	Pro	Ile	Tyr	Thr	Glu	Leu	Cys	Arg		
269					274					279					284		
ccc	tcc	aag	cgc	agg	atg	cag	gcc	gtg	gcc	aac	gtg	tcc	att	ggg	gcc		1152
Pro	Ser	Lys	Arg	Arg	Met	Gln	Ala	Val	Ala	Asn	Val	Ser	Ile	Gly	Ala		
285					290					295					300		
atg	ttc	tgc	atg	tat	ggg	ctc	aca	gca	acc	ttt	gga	tac	ctc	acc	ttc		1200
Met	Phe	Cys	Met	Tyr	Gly	Leu	Thr	Ala	Thr	Phe	Gly	Tyr	Leu	Thr	Phe		
301					306					311					316		
tac	agc	agt	gtg	aag	gcg	gag	atg	ctg	cac	atg	tac	agc	cag	aag	gac		1248
Tyr	Ser	Ser	Val	Lys	Ala	Glu	Met	Leu	His	Met	Tyr	Ser	Gln	Lys	Asp		

317	322	327	332	
ccg ctc atc ctc tgt	gtg cgc ctg gcc	gtg ctg ctc gcg	gtg acc ctc	1296
Pro Leu Ile Leu Cys	Val Arg Leu Ala Val	Leu Leu Ala Val	Thr Leu	
333	338	343	348	
act gtg cca gtc gtg	ctg ttc cct atc cgc	cgg gcc ctg cag	cag ctg	1344
Thr Val Pro Val Val	Leu Phe Pro Ile Arg	Arg Ala Leu Gln	Gln Leu	
349	354	359	364	
ctt ttc cca ggc aag	gcc ttc agc tgg cca	cga cat gtg gcc	ata gct	1392
Leu Phe Pro Gly Lys	Ala Phe Ser Trp Pro	Arg His Val Ala	Ile Ala	
365	370	375	380	
ctg atc ctg ctt gtt	ttg gtc aat gtc ctt	gtc atc tgt gtg	cca acc	1440
Leu Ile Leu Leu Val	Leu Val Asn Val Leu	Val Ile Cys Val	Pro Thr	
381	386	391	396	
atc cgg gat atc ttt	gga gtt atc ggg tcc	acc tca gcc ccc	agc ctc	1488
Ile Arg Asp Ile Phe	Gly Val Ile Gly Ser	Thr Ser Ala Pro	Ser Leu	
397	402	407	412	
atc ttc atc ctc ccc	agc atc ttc tac ctc	cgc att gta ccc	tct gag	1536
Ile Phe Ile Leu Pro	Ser Ile Phe Tyr Leu	Arg Ile Val Pro	Ser Glu	
413	418	423	428	
gtg gag cct ttc tta	tcc tgg ccc aag atc	cag gcc ctg tgc	ttt gga	1584
Val Glu Pro Phe Leu	Ser Trp Pro Lys Ile	Gln Ala Leu Cys	Phe Gly	
429	434	439	444	
gtc ctg gga gtc ctc	ttc atg gcc gtc agt	cta ggc ttt atg	ttt gcc	1632
Val Leu Gly Val Leu	Phe Met Ala Val Ser	Leu Gly Phe Met	Phe Ala	
445	450	455	460	
aac tgg gcc aca ggc	cag agc cgc atg tct	gga cac tga tcaggccctg		1681
Asn Trp Ala Thr Gly	Gln Ser Arg Met Ser	Gly His *		
461	466	471		
ctggcccagg tccctgtg	cg catgcacatg gaggggtc	ag gcccgctccc tagggctccct		1741
cctgcccac atgtggaggt	ggctgggttcc catgaacgtg	gttgtcagag gcgggggaca		1801
gcagaggctg cagactggcc	cacttcctc ctccccagg	g atgccaagct tggatcatgg		1861
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<220>

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<222> (608) .. (769)

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gcttccatca cccttcctt aatgccagga gcgccgaggt ttggaactga ggctaaaaccg      180
aaggctttct cctgcttctg tcaccctgtg ctgtctcccg gcattctctc actatctggg      240
tccaggcccc ggtcctccct gcagactccc tccctccag cccacaagga ctccagcctg      300
ctggctgggt agagctggat gagcagtaag aagttaacgc caggtcagcc tcgggccccca      360
gggttccctg ggcacaggct gacactagga gctgctctcc ttggccgggg acagctccag      420
cagctcaggc tccagccctc cagtgaagcg cctctcctgg agagtagcaa agaattggaga      480
aaggcctggc ttgagaggaa atggagaaaa cattgcctgg tagctgcaga ttcaaaccga      540
ccacacacac cacggggcta gactgactca cctgggctca caccaacttc tggccaatgc      600
agggacc  atg ctc tgc aga cag cag tcc tct agc atg gcc cca gca ttc      649
          Met Leu Cys Arg Gln Gln Ser Ser Ser Met Ala Pro Ala Phe
          1             5             10

agc cag tcg gtc acc tgt ggg cca tcc cca tgt gtg agg aag cag gag      697
Ser Gln Ser Val Thr Cys Gly Pro Ser Pro Cys Val Arg Lys Gln Glu
  15             20             25             30

tca gcc acc aag tgt ctc cac atc gga gct tgc ggg tca gac ctg tgg      745
Ser Ala Thr Lys Cys Leu His Ile Gly Ala Cys Gly Ser Asp Leu Trp
  31             36             41             46

gcc agg gga tgg gag cag ggc tga gggtaggggc tgaatgtgtg gctctgtccc      799
Ala Arg Gly Trp Glu Gln Gly  *
  47             52

tgtgttgcc tccacagagg agcaaggcct caggctgagg aaggaggggc acgctggaac      859
agcctagtct cctccccgtg gattccccca aaccataac attcttccat aggggctgag      919
aacgcagtgc cccgtccctg acagggatga aaagtgaacc cctcagggtc ggagaggcag      979
agttgagggt ctgccacttc ctgtccctgg ggagccactc aagttaccag ggctaccggc     1039
tgaaataaat cttttccggg taggggtcaag ggcagtgtgt tccaaggcaa ctgatgtagg     1099
ccagttgcgt gactccaggt ttgtcctggt actcagtggg tccaatcacc tggcattgat     1159
cacctggcat tgatcagcac ccacccacc cctgaggctt gccagcccc caggccctca     1219
gatccctgct ctctctgctt ttctgcccc tgtgtcacc agcacccaag gttcagtgc      1279
acagggtggt ttggagctgg tcaactgtcat agcagctgtg atttcacaag gaagggtgct     1339
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 <212> DNA
 <213> Homo sapiens

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 <222> (528)..(1604)

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 cttgtttcca tgacggcacg tgcgtccttg acaaggctgg atcttacaag tgtgcctgct 180
 tggcaggcta tactgggcag cgctgtgaaa atcttctgga ggctgggaag tccaagatca 240
 aggcgtcaga agattcattg tctgtccttg aagaaagaaa ctgctcagac cctggggggcc 300
 cagtcaatgg gtaccagaaa ataacagggg gccctgggct tatcaacgga cgccatgcta 360
 aaattggcac cgtggtgtct ttcttttgta acaactccta tggtcttagt ggcaatgaga 420
 aaagaacttg ccagcagaat ggagagtggg cagggaaaca gcccatctgc ataaaagcct 480
 gccgagaacc aaagatttca gacctgggtga gaaggagagt tcttccg atg cag gtt 536
 Met Gln Val
 1
 cag tca agg gag aca cca tta cac cag cta tac tca gcg gcc ttc agc 584
 Gln Ser Arg Glu Thr Pro Leu His Gln Leu Tyr Ser Ala Ala Phe Ser
 4 9 14 19
 aag cag aaa ctg cag agt gcc cct acc aag aag cca gcc ctt ccc ttt 632
 Lys Gln Lys Leu Gln Ser Ala Pro Thr Lys Lys Pro Ala Leu Pro Phe
 20 25 30 35
 gga gat ctg ccc atg gga tac caa cat ctg cat acc cag ctc cag tat 680
 Gly Asp Leu Pro Met Gly Tyr Gln His Leu His Thr Gln Leu Gln Tyr
 36 41 46 51
 gag tgc atc tca ccc ttc tac cgc cgc ctg ggc agc agc agg agg aca 728
 Glu Cys Ile Ser Pro Phe Tyr Arg Arg Leu Gly Ser Ser Arg Arg Thr
 52 57 62 67
 tgt ctg agg act ggg aag tgg agt ggg cgg gca cca tcc tgc atc cct 776
 Cys Leu Arg Thr Gly Lys Trp Ser Gly Arg Ala Pro Ser Cys Ile Pro
 68 73 78 83

atc tgc ggg aaa att gag aac atc act gct cca aag acc caa ggg ttg	824
Ile Cys Gly Lys Ile Glu Asn Ile Thr Ala Pro Lys Thr Gln Gly Leu	
84 89 94 99	
cgc tgg ccg tgg cag gca gcc atc tac agg agg acc agc ggg gtg cat	872
Arg Trp Pro Trp Gln Ala Ala Ile Tyr Arg Arg Thr Ser Gly Val His	
100 105 110 115	
gac ggc agc cta cac aag gga gcg tgg ttc cta gtc tgc agc ggt gcc	920
Asp Gly Ser Leu His Lys Gly Ala Trp Phe Leu Val Cys Ser Gly Ala	
116 121 126 131	
ctg gtg aat gag cgc act gtg gtg gtg gct gcc cac tgt gtt act gac	968
Leu Val Asn Glu Arg Thr Val Val Val Ala Ala His Cys Val Thr Asp	
132 137 142 147	
ctg ggg aag gtc acc atg atc aag aca gca gac ctg aaa gtt gtt ttg	1016
Leu Gly Lys Val Thr Met Ile Lys Thr Ala Asp Leu Lys Val Val Leu	
148 153 158 163	
ggg aaa ttc tac cgg gat gat gac cgg gat gag aag acc atc cag agc	1064
Gly Lys Phe Tyr Arg Asp Asp Asp Arg Asp Glu Lys Thr Ile Gln Ser	
164 169 174 179	
cta cag att tct gct atc att ctg cat ccc aac tat gac ccc atc ctg	1112
Leu Gln Ile Ser Ala Ile Ile Leu His Pro Asn Tyr Asp Pro Ile Leu	
180 185 190 195	
ctt gat gct gac atc gcc atc ctg aag ctc cta gac aag gcc cgt atc	1160
Leu Asp Ala Asp Ile Ala Ile Leu Lys Leu Leu Asp Lys Ala Arg Ile	
196 201 206 211	
agc acc cga gtc cag ccc atc tgc ctc gct gcc agt cgg gat ctc agc	1208
Ser Thr Arg Val Gln Pro Ile Cys Leu Ala Ala Ser Arg Asp Leu Ser	
212 217 222 227	
act tcc ttc cag gag tcc cac atc act gtg gct ggc tgg aat gtc ctg	1256
Thr Ser Phe Gln Glu Ser His Ile Thr Val Ala Gly Trp Asn Val Leu	
228 233 238 243	
gca gac gtg agg agc cct ggc ttc aag aac gac aca ctg cgc tct ggg	1304
Ala Asp Val Arg Ser Pro Gly Phe Lys Asn Asp Thr Leu Arg Ser Gly	
244 249 254 259	
gtg gtc agt gtg gtg gac tgc ctg ctg tgt gag gag cag cat gag gac	1352
Val Val Ser Val Val Asp Ser Leu Leu Cys Glu Glu Gln His Glu Asp	
260 265 270 275	
cat ggc atc cca gtg agt gtc act gat aac atg ttc tgt gcc agc tgg	1400
His Gly Ile Pro Val Ser Val Thr Asp Asn Met Phe Cys Ala Ser Trp	
276 281 286 291	
gaa ccc act gcc cct tct gat atc tgc act gca gag aca gga ggc atc	1448
Glu Pro Thr Ala Pro Ser Asp Ile Cys Thr Ala Glu Thr Gly Gly Ile	
292 297 302 307	

gcg gct gtg tcc ttc ccg gga cga gca tct cct gag cca cgc tgg cat	1496
Ala Ala Val Ser Phe Pro Gly Arg Ala Ser Pro Glu Pro Arg Trp His	
308 313 318 323	
ctg atg gga ctg gtc agc tgg agc tat gat aaa aca tgc agc cac agg	1544
Leu Met Gly Leu Val Ser Trp Ser Tyr Asp Lys Thr Cys Ser His Arg	
324 329 334 339	
ctc tcc act gcc ttc acc aag gtg ctg cct ttt aaa gac tgg att gaa	1592
Leu Ser Thr Ala Phe Thr Lys Val Leu Pro Phe Lys Asp Trp Ile Glu	
340 345 350 355	
aga aat atg aaa tga accatgctca tgcactcctt gagaagtgtt tctgtatatc	1647
Arg Asn Met Lys	
356	
cgtctgtacg tgtgtcattg cgtgaagcag tgtgggcctg aagtgtgatt tggcctgtga	1707
acttggtctgt gccagggctt ctgacttcag ggacaaaact cagtgaaggg tgagtagacc	1767
tccattgctg gtaggctgat gccgcctcca ctactaggac agccaattgg aagatgccag	1827
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acctggtggt cttccccaac tttcagttat acgaatgcca tcagcttgac caggggaagat	1947
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cccagggcag cagagctggg atgtggtgca tgccctttgtg tacatggcca cagtacagtc	2067
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ctaaccggg aagcggcagc tgagcgggccc gggaggagcg ccggcccccg tggatcccga	180
gagtgcagag ctcggggcag gggccgggag gcgtggggga gccgggccct cccctcagga	240
acgtgtcccc gggccgaccc ggcccgtagt gtggaagcag cttcaggtag gtgagctcgt	300

gaaacaatat gaagaggaga aaatagcctt ttaaggaaat tggccacag aaagg atg	358
Met	
1	
gcc ttc ttg gac aat cca act atc att cta gct cat att cga cag tca	406
Ala Phe Leu Asp Asn Pro Thr Ile Ile Leu Ala His Ile Arg Gln Ser	
2 7 12 17	
cat gtg acc agt gat gac acg gga atg tgt gag atg gtt ctc att gat	454
His Val Thr Ser Asp Asp Thr Gly Met Cys Glu Met Val Leu Ile Asp	
18 23 28 33	
cat gat gtt gac cta gag aag att cat cct cct tca atg cct gga gac	502
His Asp Val Asp Leu Glu Lys Ile His Pro Pro Ser ² Met Pro Gly Asp	
34 39 44 49	
agt ggg tca gaa att cag gga agc aat ggt gag act cag ggc tat gta	550
Ser Gly Ser Glu Ile Gln Gly Ser Asn Gly Glu Thr Gln Gly Tyr Val	
50 55 60 65	
tat gcc cag tca gtc gat att acc tca agt tgg gac ttt ggt att aga	598
Tyr Ala Gln Ser Val Asp Ile Thr Ser Ser Trp Asp Phe Gly Ile Arg	
66 71 76 81	
aga cgc tca aac aca gct caa aga tta gaa cga ctc cga aaa gag aga	646
Arg Arg Ser Asn Thr Ala Gln Arg Leu Glu Arg Leu Arg Lys Glu Arg	
82 87 92 97	
caa aac cag atc aaa tgc aaa aat att cag tgg aaa gaa aga aat tct	694
Gln Asn Gln Ile Lys Cys Lys Asn Ile Gln Trp Lys Glu Arg Asn Ser	
98 103 108 113	
aag caa tca gcc cag gag tta aag tca ctg ttt gaa aaa aaa tct ctc	742
Lys Gln Ser Ala Gln Glu Leu Lys Ser Leu Phe Glu Lys Lys Ser Leu	
114 119 124 129	
aaa gag aag cct cca att tct ggg aag cag tcg ata tta tct gta cgc	790
Lys Glu Lys Pro Pro Ile Ser Gly Lys Gln Ser Ile Leu Ser Val Arg	
130 135 140 145	
cta gaa cag tgc cct ctg cag ctg aat aac cct ttt aac gag tat tcc	838
Leu Glu Gln Cys Pro Leu Gln Leu Asn Asn Pro Phe Asn Glu Tyr Ser	
146 151 156 161	
aaa ttt gat ggc aag ggt cat gta ggt aca aca gca acc aag aag atc	886
Lys Phe Asp Gly Lys Gly His Val Gly Thr Thr Ala Thr Lys Lys Ile	
162 167 172 177	
gat gtc tac ctc cct ctg cac tcg agc cag gac aga ctg ctg cca atg	934
Asp Val Tyr Leu Pro Leu His Ser Ser Gln Asp Arg Leu Leu Pro Met	
178 183 188 193	
acc gtg gtg aca atg gcc agc gcc agg gtg cag gac ctg atc ggg ctc	982
Thr Val Val Thr Met Ala Ser Ala Arg Val Gln Asp Leu Ile Gly Leu	
194 199 204 209	
atc tgc tgg cag tat aca agc gaa gga cgg gag ccg aag ctc aat gac	1030

Ile Cys Trp Gln Tyr Thr Ser Glu Gly Arg Glu Pro Lys Leu Asn Asp	
210 215 220 225	
aat gtc agt gcc tac tgc ctg cat att gct gag gat gat ggg gag gtg	1078
Asn Val Ser Ala Tyr Cys Leu His Ile Ala Glu Asp Asp Gly Glu Val	
226 231 236 241	
gac acc gat ttc ccc ccg ctg gat tcc aat gag ccc att cat aag ttt	1126
Asp Thr Asp Phe Pro Pro Leu Asp Ser Asn Glu Pro Ile His Lys Phe	
242 247 252 257	
ggc ttc agt act ttg gcc ctg gtt gaa aag tac tca tct cct ggt ctg	1174
Gly Phe Ser Thr Leu Ala Leu Val Glu Lys Tyr Ser Ser Pro Gly Leu	
258 263 268 273	
aca tcc aaa gag tca ctc ttt gtt cga ata aat gct gct cat gga ttc	1222
Thr Ser Lys Glu Ser Leu Phe Val Arg Ile Asn Ala Ala His Gly Phe	
274 279 284 289	
tcc ctt att cag gtg gac aac aca aag gtt acc atg aag gaa atc tta	1270
Ser Leu Ile Gln Val Asp Asn Thr Lys Val Thr Met Lys Glu Ile Leu	
290 295 300 305	
ctg aag gca gtg aag cga aga aaa gga tcc cag aaa gtt tca ggc cct	1318
Leu Lys Ala Val Lys Arg Arg Lys Gly Ser Gln Lys Val Ser Gly Pro	
306 311 316 321	
cag tac cgc ctg gag aag cag agc gag ccc aat gtc gcc gtt gac ctg	1366
Gln Tyr Arg Leu Glu Lys Gln Ser Glu Pro Asn Val Ala Val Asp Leu	
322 327 332 337	
gac agc act ttg gag agc cag agc gca tgg gag ttc tgc ctg gtc cgc	1414
Asp Ser Thr Leu Glu Ser Gln Ser Ala Trp Glu Phe Cys Leu Val Arg	
338 343 348 353	
gag aac agt tca agg gca gac ggg gtt ttt gag gag gat tcg caa att	1462
Glu Asn Ser Ser Arg Ala Asp Gly Val Phe Glu Glu Asp Ser Gln Ile	
354 359 364 369	
gac ata gcc aca gta cag gat atg ctt agc agc cac cat tac aag tca	1510
Asp Ile Ala Thr Val Gln Asp Met Leu Ser Ser His His Tyr Lys Ser	
370 375 380 385	
ttc aaa gtc agc atg atc cac aga ctg cga ttc aca acc gac gta cag	1558
Phe Lys Val Ser Met Ile His Arg Leu Arg Phe Thr Thr Asp Val Gln	
386 391 396 401	
cta ggt atc tct gga gac aaa gta gag ata gac cct gtt acg aat cag	1606
Leu Gly Ile Ser Gly Asp Lys Val Glu Ile Asp Pro Val Thr Asn Gln	
402 407 412 417	
aaa gcc agc act aag ttt tgg att aag cag aaa ccc atc tca atc gat	1654
Lys Ala Ser Thr Lys Phe Trp Ile Lys Gln Lys Pro Ile Ser Ile Asp	
418 423 428 433	
tcc gac ctg ctc tgt gcc tgt gac ctt gct gaa gag aaa agc ccc agt	1702
Ser Asp Leu Leu Cys Ala Cys Asp Leu Ala Glu Glu Lys Ser Pro Ser	

434	439	444	449	
cac gca ata ttt aaa ctc acg tat cta agc aat	cac gac tat aaa cac	1750		
His Ala Ile Phe Lys Leu Thr Tyr Leu Ser Asn	His Asp Tyr Lys His			
450	455	460	465	
ctc tac ttt gaa tcg gac gct gct acc gtc aat	gaa att gtg ctc aag	1798		
Leu Tyr Phe Glu Ser Asp Ala Ala Thr Val Asn	Glu Ile Val Leu Lys			
466	471	476	481	
ggt aac tac atc ctg gaa tcg cga gct agc act	gcc cgg gct gac tac	1846		
Val Asn Tyr Ile Leu Glu Ser Arg Ala Ser Thr	Ala Arg Ala Asp Tyr			
482	487	492	497	
ttt gct caa aaa caa aga aaa ctg aac aga cgt	acg agc ttc agc ttc	1894		
Phe Ala Gln Lys Gln Arg Lys Leu Asn Arg Arg	Thr Ser Phe Ser Phe			
498	503	508	513	
cag aag gag aag aaa tcc ggg cag cag tga c	actggcctcc agcctcaatc	1945		
Gln Lys Glu Lys Lys Ser Gly Gln Gln *				
514	519			
tggtccgtag ctcagagcct gcctgccagg gccaaagtgc	ctagagccca cccggtgtcc	2005		
tgaagtcctc ggggggaggg cagcccctgg ctactggca	cagggcaggt gggctctcgg	2065		
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ccacacattt ccttgcaact tgatcaaatt tcttaaagca	aacaacaaaa atgtacattt	2305		
ctgtttttcc ttttaataaa caggtgtact ctttaaaaaa	aaaaaa	2351		

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ctaaccgggg aagcggcagc tgagcggggc gggaggagcg	ccgggtccccg tggatcccg	180
gagtgcagag ctgcggggcag gggccggggag gcgtggggga	gccggggccct cccctcagga	240

acgtgtcccg gggccgaccc ggcccgtagt gtggaagcag cttcaggtag gtgagctcgt 300

gaaacaatat gaagaggaga aaatagcctt ttaaggaaat tggcccacag aaagg atg 358
Met
1

gcc ttc ttg gac aat cca act atc att cta gct cat att cga cag tca 406
Ala Phe Leu Asp Asn Pro Thr Ile Ile Leu Ala His Ile Arg Gln Ser
2 7 12 17

cat gtg acc agt gat gac acg gga atg tgt gag atg gtt ctc att gat 454
His Val Thr Ser Asp Thr Gly Met Cys Glu Met Val Leu Ile Asp
18 23 28 33

cat gat gtt gac cta gag aag att cat cct cct tca atg cct gga gac 502
His Asp Val Asp Leu Glu Lys Ile His Pro Pro Ser Met Pro Gly Asp
34 39 44 49

agt ggg tca gaa att cag gga agc aat ggt gag act cag ggc tat gta 550
Ser Gly Ser Glu Ile Gln Gly Ser Asn Gly Glu Thr Gln Gly Tyr Val
50 55 60 65

tat gcc cag tca gtc gat att acc tca agt tgg gac ttt ggt att aga 598
Tyr Ala Gln Ser Val Asp Ile Thr Ser Ser Trp Asp Phe Gly Ile Arg
66 71 76 81

aga cgc tca aac aca gct caa aga tta gaa cga ctc cga aaa gag aga 646
Arg Arg Ser Asn Thr Ala Gln Arg Leu Glu Arg Leu Arg Lys Glu Arg
82 87 92 97

caa aac cag atc aaa tgc aaa aat att cag tgg aaa gaa aga aat tct 694
Gln Asn Gln Ile Lys Cys Lys Asn Ile Gln Trp Lys Glu Arg Asn Ser
98 103 108 113

aag caa tca gcc cag gag tta aag tca ctg ttt gaa aaa aaa tct ctc 742
Lys Gln Ser Ala Gln Glu Leu Lys Ser Leu Phe Glu Lys Lys Ser Leu
114 119 124 129

aaa gag aag cct cca att tct ggg aag cag tcg ata tta tct gta cgc 790
Lys Glu Lys Pro Pro Ile Ser Gly Lys Gln Ser Ile Leu Ser Val Arg
130 135 140 145

cta gaa cag tgc cct ctg cag ctg aat aac cct ttt aac gag tat tcc 838
Leu Glu Gln Cys Pro Leu Gln Leu Asn Asn Pro Phe Asn Glu Tyr Ser
146 151 156 161

aaa ttt gat ggc aag ggt cat gta ggt aca aca gca acc aag aag atc 886
Lys Phe Asp Gly Lys Gly His Val Gly Thr Thr Ala Thr Lys Lys Ile
162 167 172 177

gat gtc tac ctc cct ctg cac tcg agc cag gac aga ctg ctg cca atg 934
Asp Val Tyr Leu Pro Leu His Ser Ser Gln Asp Arg Leu Leu Pro Met
178 183 188 193

acc gtg gtg aca atg gcc agc gcc agg gtg cag gac ctg atc ggg ctc 982
Thr Val Val Thr Met Ala Ser Ala Arg Val Gln Asp Leu Ile Gly Leu
194 199 204 209

atc tgc tgg cag tat aca agc gaa gga cgg gag ccg aag ctc aat gac	1030
Ile Cys Trp Gln Tyr Thr Ser Glu Gly Arg Glu Pro Lys Leu Asn Asp	
210 215 220 225	
aat gtc agt gcc tac tgc ctg cat att gct gag gat gat ggg gag gtg	1078
Asn Val Ser Ala Tyr Cys Leu His Ile Ala Glu Asp Asp Gly Glu Val	
226 231 236 241	
gac acc gat ttc ccc ccg ctg gat tcc aat gag ccc att cat aag ttt	1126
Asp Thr Asp Phe Pro Pro Leu Asp Ser Asn Glu Pro Ile His Lys Phe	
242 247 252 257	
ggc ttc agt act ttg gcc ctg gtt gaa aag tac tca tct cct ggt ctg	1174
Gly Phe Ser Thr Leu Ala Leu Val Glu Lys Tyr Ser Ser Pro Gly Leu	
258 263 268 273	
aca tcc aaa gag tca ctc ttt gtt cga ata aat gct gct cat gga ttc	1222
Thr Ser Lys Glu Ser Leu Phe Val Arg Ile Asn Ala Ala His Gly Phe	
274 279 284 289	
tcc ctt att cag gtg gac aac aca aag gtt acc atg aag gaa atc tta	1270
Ser Leu Ile Gln Val Asp Asn Thr Lys Val Thr Met Lys Glu Ile Leu	
290 295 300 305	
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Leu Lys Ala Val Lys Arg Arg Lys Gly Ser Gln Lys Val Ser Gly Ser	
306 311 316 321	
agg gca gac ggg gtt ttt gag gag gat tgc caa att gac ata gcc aca	1366
Arg Ala Asp Gly Val Phe Glu Glu Asp Ser Gln Ile Asp Ile Ala Thr	
322 327 332 337	
gta cag gat atg ctt agc agc cac cat tac aag tca ttc aaa gtc agc	1414
Val Gln Asp Met Leu Ser Ser His His Tyr Lys Ser Phe Lys Val Ser	
338 343 348 353	
atg atc cac aga ctg cga ttc aca acc gac gta cag cta ggt atc tct	1462
Met Ile His Arg Leu Arg Phe Thr Thr Asp Val Gln Leu Gly Ile Ser	
354 359 364 369	
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Gly Asp Lys Val Glu Ile Asp Pro Val Thr Asn Gln Lys Ala Ser Thr	
370 375 380 385	
aag ttt tgg att aag cag aaa ccc atc tca atc gat tcc gac ctg ctc	1558
Lys Phe Trp Ile Lys Gln Lys Pro Ile Ser Ile Asp Ser Asp Leu Leu	
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Cys Ala Cys Asp Leu Ala Glu Glu Lys Ser Pro Ser His Ala Ile Phe	
402 407 412 417	
aaa ctc acg tat cta agc aat cac gac tat aaa cac ctc tac ttt gaa	1654
Lys Leu Thr Tyr Leu Ser Asn His Asp Tyr Lys His Leu Tyr Phe Glu	
418 423 428 433	

tcg gac gct gct acc gtc aat gaa att gtg ctc aag gtt aac tac atc	1702
Ser Asp Ala Ala Thr Val Asn Glu Ile Val Leu Lys Val Asn Tyr Ile	
434 439 444 449	
ctg gaa tcg cga gct agc act gcc cgg gct gac tac ttt gct caa aaa	1750
Leu Glu Ser Arg Ala Ser Thr Ala Arg Ala Asp Tyr Phe Ala Gln Lys	
450 455 460 465	
caa aga aaa ctg aac aga cgt acg agc ttc agc ttc cag aag gag aag	1798
Gln Arg Lys Leu Asn Arg Arg Thr Ser Phe Ser Phe Gln Lys Glu Lys	
466 471 476 481	
aaa tcc ggg cag cag tga cactgg cctccagcct caatctgttc cgtagctcag	1852
Lys Ser Gly Gln Gln *	
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ccccctagg agggagcgt ggggacattg ccatgggacg gaagtctgct tggcagtggc	2032
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accttcaatg cctgccaccc tgcccagagga tgtacagagc cgtgcccaca catttccttg	2152
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acgtgtcccc gggccgaccc ggcccgtagt gtggaagcag cttcaggtag gtgagctcgt	300
gaaacaatat gaagaggaga aaatagcctt ttaaggaaat tggccacag aaagg atg	358
Met	

gcc ttc ttg gac aat cca act atc att cta gct cat att cga cag tca	406
Ala Phe Leu Asp Asn Pro Thr Ile Ile Leu Ala His Ile Arg Gln Ser	
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cat gtg acc agt gat gac acg gga atg tgt gag atg gtt ctc att gat	454
His Val Thr Ser Asp Asp Thr Gly Met Cys Glu Met Val Leu Ile Asp	
18 23 28 33	
cat gat gtt gac cta gag aag att cat cct cct tca atg cct gga gac	502
His Asp Val Asp Leu Glu Lys Ile His Pro Pro Ser Met Pro Gly Asp	
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Ser Gly Ser Glu Ile Gln Gly Ser Asn Gly Glu Thr Gln Gly Tyr Val	
50 55 60 65	
tat gcc cag tca gtc gat att acc tca agt tgg gac ttt ggt att aga	598
Tyr Ala Gln Ser Val Asp Ile Thr Ser Ser Trp Asp Phe Gly Ile Arg	
66 71 76 81	
aga cgc tca aac aca gct caa aga tta gaa cga ctc cga aaa gag aga	646
Arg Arg Ser Asn Thr Ala Gln Arg Leu Glu Arg Leu Arg Lys Glu Arg	
82 87 92 97	
caa aac cag atc aaa tgc aaa aat att cag tgg aaa gaa aga aat tct	694
Gln Asn Gln Ile Lys Cys Lys Asn Ile Gln Trp Lys Glu Arg Asn Ser	
98 103 108 113	
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Lys Gln Ser Ala Gln Glu Leu Lys Ser Leu Phe Glu Lys Lys Ser Leu	
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aaa gag aag cct cca att tct ggg aag cag tgc ata tta tct gta cgc	790
Lys Glu Lys Pro Pro Ile Ser Gly Lys Gln Ser Ile Leu Ser Val Arg	
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Leu Glu Gln Cys Pro Leu Gln Leu Asn Asn Pro Phe Asn Glu Tyr Ser	
146 151 156 161	
aaa ttt gat ggc aag ggt cat gta ggt aca aca gca acc aag aag atc	886
Lys Phe Asp Gly Lys Gly His Val Gly Thr Thr Ala Thr Lys Lys Ile	
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Asp Val Tyr Leu Pro Leu His Ser Ser Gln Asp Arg Leu Leu Pro Met	
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acc gtg gtg aca atg gcc agc gcc agg gtg cag gac ctg atc ggg ctc	982
Thr Val Val Thr Met Ala Ser Ala Arg Val Gln Asp Leu Ile Gly Leu	
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Ile Cys Trp Gln Tyr Thr Ser Glu Gly Arg Glu Pro Lys Leu Asn Asp	
210 215 220 225	
aat gtc agt gcc tac tgc ctg cat att gct gag gat gat ggg gag gtg	1078

Asn Val Ser Ala Tyr Cys Leu His Ile Ala Glu Asp Asp Gly Glu Val	
226 231 236 241	
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Asp Thr Asp Phe Pro Pro Leu Asp Ser Asn Glu Pro Ile His Lys Phe	
242 247 252 257	
ggc ttc agt act ttg gcc ctg gtt gaa aag tac tca tct cct ggt ctg	1174
Gly Phe Ser Thr Leu Ala Leu Val Glu Lys Tyr Ser Ser Pro Gly Leu	
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aca tcc aaa gag tca ctc ttt gtt cga ata aat gct gct cat gga ttc	1222
Thr Ser Lys Glu Ser Leu Phe Val Arg Ile Asn Ala Ala His Gly Phe	
274 279 284 289	
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Ser Leu Ile Gln Val Asp Asn Thr Lys Val Thr Met Lys Glu Ile Leu	
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ctg aag gca gtg aag cga aga aaa gga tcc cag aaa gtt tca ggc cct	1318
Leu Lys Ala Val Lys Arg Arg Lys Gly Ser Gln Lys Val Ser Gly Pro	
306 311 316 321	
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Gln Tyr Arg Leu Glu Lys Gln Ser Glu Pro Asn Val Ala Val Asp Leu	
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Asp Ser Thr Leu Glu Ser Gln Ser Ala Trp Glu Phe Cys Leu Val Arg	
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Gln Lys Ala Ser Thr Lys Phe Trp Ile Lys Gln Lys Pro Ile Ser Ile	
370 375 380 385	
gat tcc gac ctg ctc tgt gcc tgt gac ctt gct gaa gag aaa agc ccc	1558
Asp Ser Asp Leu Leu Cys Ala Cys Asp Leu Ala Glu Glu Lys Ser Pro	
386 391 396 401	
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Ser His Ala Ile Phe Lys Leu Thr Tyr Leu Ser Asn His Asp Tyr Lys	
402 407 412 417	
cac ctc tac ttt gaa tcg gac gct gct acc gtc aat gaa att gtg ctc	1654
His Leu Tyr Phe Glu Ser Asp Ala Ala Thr Val Asn Glu Ile Val Leu	
418 423 428 433	
aag gtt aac tac atc ctg gaa tcg cga gct agc act gcc cgg gct gac	1702
Lys Val Asn Tyr Ile Leu Glu Ser Arg Ala Ser Thr Ala Arg Ala Asp	
434 439 444 449	
tac ttt gct caa aaa caa aga aaa ctg aac aga cgt acg agc ttc agc	1750
Tyr Phe Ala Gln Lys Gln Arg Lys Leu Asn Arg Arg Thr Ser Phe Ser	

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Phe Gln Lys Glu Lys Lys Ser Gly Gln Gln *				
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agtctgcttg gcagtggctt tgataagcga tgcttggggg tcagaccacc ccctagagga				2041
gccacgtgcc gccagccac cttcaatgcc tgccacctg cccgaggatg tacagagccg				2101
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g atg gcg gag gtg cag gtc ctg gtg ctt gat ggt cga ggc cat ctc	166
Met Ala Glu Val Gln Val Leu Val Leu Asp Gly Arg Gly His Leu	
1 5 10	
ctg ggc cgc ctg gcg gcc atc gtg gct aaa cag gta ctg ctg ggc cgg	214
Leu Gly Arg Leu Ala Ala Ile Val Ala Lys Gln Val Leu Leu Gly Arg	
16 21 26 31	
aag gtg gtg gtc gta cgc tgt gaa ggc atc aac att tct ggc aat ttc	262
Lys Val Val Val Val Arg Cys Glu Gly Ile Asn Ile Ser Gly Asn Phe	
32 37 42 47	
tac aga aac aag ttg aag tac ctg gct ttc ctc cgc aag cgg atg aac	310
Tyr Arg Asn Lys Leu Lys Tyr Leu Ala Phe Leu Arg Lys Arg Met Asn	
48 53 58 63	
acc aac cct tcc cga ggc ccc tac cac ttc cgg gcc ccc agc cgc atc	358
Thr Asn Pro Ser Arg Gly Pro Tyr His Phe Arg Ala Pro Ser Arg Ile	
64 69 74 79	

ttc tgg cgg acc gtg cga ggt atg ctg ccc cac aaa acc aag cga ggc	406
Phe Trp Arg Thr Val Arg Gly Met Leu Pro His Lys Thr Lys Arg Gly	
80 85 90 95	
cag gcc gct ctg gac cgt ctc aag gtg ttt gac ggc atc cca ccg ccc	454
Gln Ala Ala Leu Asp Arg Leu Lys Val Phe Asp Gly Ile Pro Pro Pro	
96 101 106 111	
tac gac aag aaa aag cgg atg gtg gtt cct gct gcc ctc aag gtc gtg	502
Tyr Asp Lys Lys Lys Arg Met Val Val Pro Ala Ala Leu Lys Val Val	
112 117 122 127	
cgt ctg aag cct aca aga aag ttt gcc tat ctg ggg cgc ctg gct cac	550
Arg Leu Lys Pro Thr Arg Lys Phe Ala Tyr Leu Gly Arg Leu Ala His	
128 133 138 143	
gag gtt ggc tgg aag tac cag gca gtg aca gcc acc ctg gag gag aag	598
Glu Val Gly Trp Lys Tyr Gln Ala Val Thr Ala Thr Leu Glu Glu Lys	
144 149 154 159	
agg aaa gag aaa gcc aag atc cac tac cgg aag aag aaa cag ctc atg	646
Arg Lys Glu Lys Ala Lys Ile His Tyr Arg Lys Lys Lys Gln Leu Met	
160 165 170 175	
agg cta cgg aaa cag gcc gag aag aac gtg gag aag aaa att gac aaa	694
Arg Leu Arg Lys Gln Ala Glu Lys Asn Val Glu Lys Lys Ile Asp Lys	
176 181 186 191	
tac aca gag gtc ctc aag acc cac gga ctc ctg gtc tga gcccaataaa	743
Tyr Thr Glu Val Leu Lys Thr His Gly Leu Leu Val *	
192 197 202	
gactgttaat tctcatgcg ttgctgccc ttctccatt gttgccctgg aatgtacggg	803
accagggggc agcagcagtc cagggtgccac aggcagccct gggacatagg aagctgggag	863
caaggaaagg gtcttagtca ctgcctcccg aagttgcttg aaagcactcg gagaattgtg	923
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ccagaagact gattggaggg ccctatcttg tgagtggggc atctgttgga ctttccacct	1043
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ttgtacacag ggtatttcta gaagcagaaa tagactggga agatgcacaa ccaagggggt	1163
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Gly Gln Asp Trp Arg Ser Pro Gly Gln Asn Trp Val Lys Thr Ala Asp
  5                      10                      15                      20

ggc tgg aag cgc ttc ctg gat gag aag agc ggc agt ttc gtg agc gac      152
Gly Trp Lys Arg Phe Leu Asp Glu Lys Ser Gly Ser Phe Val Ser Asp
  21                      26                      31                      36

ctc agc agt tac tgc aac aag gag gta tac aat aag gag aat ctt ttc      200
Leu Ser Ser Tyr Cys Asn Lys Glu Val Tyr Asn Lys Glu Asn Leu Phe
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aac agc ctg aac tat gat gtt gca gcc aag aag aga aag aag gac atg      248
Asn Ser Leu Asn Tyr Asp Val Ala Ala Lys Lys Arg Lys Lys Asp Met
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ctg aat agc aaa acc aaa act cag tat ttc cac caa gaa aaa tgg atc      296
Leu Asn Ser Lys Thr Lys Thr Gln Tyr Phe His Gln Glu Lys Trp Ile
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tat gtt cac aaa gga agt act aaa gag cgc cat gga tat tgc acc ctg      344
Tyr Val His Lys Gly Ser Thr Lys Glu Arg His Gly Tyr Cys Thr Leu
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ggg gaa gct ttc aac aga ctg gac ttc tca act gcc att ctg gat tcc      392
Gly Glu Ala Phe Asn Arg Leu Asp Phe Ser Thr Ala Ile Leu Asp Ser
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aga aga ttt aac tac gtg gtc cgg ctg ttg gag ctg ata gca aag tca      440
Arg Arg Phe Asn Tyr Val Val Arg Leu Leu Glu Leu Ile Ala Lys Ser
  117                      122                      127                      132

cag ctc aca tcc ctg agt ggc atc gcc caa aag aac ttc atg aat att      488
Gln Leu Thr Ser Leu Ser Gly Ile Ala Gln Lys Asn Phe Met Asn Ile
  133                      138                      143                      148

ttg gaa aaa gtg gta ctg aaa gtc ctt gaa gac cag caa aac att aga      536
Leu Glu Lys Val Val Leu Lys Val Leu Glu Asp Gln Gln Asn Ile Arg
  149                      154                      159                      164

cta ata agg gaa cta ctc cag acc ctc tac aca tcc tta tgt aca ctg      584
Leu Ile Arg Glu Leu Leu Gln Thr Leu Tyr Thr Ser Leu Cys Thr Leu

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165	170	175	180	
gtc caa aga gtc ggc aag tct gtg ctg gtc ggg aac att aac atg tgg				632
Val Gln Arg Val Gly Lys Ser Val Leu Val Gly Asn Ile Asn Met Trp				
181	186	191	196	
gtg tat cgg atg gag acg att ctc cac tgg cag cag cag ctg aac aac				680
Val Tyr Arg Met Glu Thr Ile Leu His Trp Gln Gln Gln Leu Asn Asn				
197	202	207	212	
att cag atc acc agg gta agc ggg cag gcc cag cct cct ccc ggc agt				728
Ile Gln Ile Thr Arg Val Ser Gly Gln Ala Gln Pro Pro Pro Gly Ser				
213	218	223	228	
ggg tcc ctc cac agg gat act gga cag cct cgc caa gac ttt gaa ttc				776
Gly Ser Leu His Arg Asp Thr Gly Gln Pro Arg Gln Asp Phe Glu Phe				
229	234	239	244	
act cct gtg acg gaa gag tct ggt ctt ttc tga tctgctgc cttgttctgg				827
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Met Pro Phe Ala	
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gaa gac aag acc tat aag tat atc tgc cgc aat ttc agc aat ttt tgc	223
Glu Asp Lys Thr Tyr Lys Tyr Ile Cys Arg Asn Phe Ser Asn Phe Cys	
5 10 15 20	
aat gtg gat gtt gta gag att ctg cct tac ctg ccc tgc ctc aca gca	271
Asn Val Asp Val Val Glu Ile Leu Pro Tyr Leu Pro Cys Leu Thr Ala	
21 26 31 36	
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Arg Asp Gln Asp Arg Leu Arg Ala Thr Cys Thr Leu Ser Gly Asn Arg	
37 42 47 52	

gac acc ctc tgg cat ctc ttc aat acc ctt cag cgg cgg ccc ggc tgg	367
Asp Thr Leu Trp His Leu Phe Asn Thr Leu Gln Arg Arg Pro Gly Trp	
53 58 63 68	
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Val Glu Tyr Phe Ile Ala Ala Leu Arg Gly Cys Glu Leu Val Asp Leu	
69 74 79 84	
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Ala Asp Glu Val Ala Ser Val Tyr Gln Ser Tyr Gln Pro Arg Thr Ser	
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Asp Arg Pro Pro Asp Pro Leu Glu Pro Pro Ser Leu Pro Ala Glu Arg	
101 106 111 116	
cca ggg ccc ccc aca cct gct gcg gcc cac agc atc ccc tac aac agc	559
Pro Gly Pro Pro Thr Pro Ala Ala Ala His Ser Ile Pro Tyr Asn Ser	
117 122 127 132	
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Cys Arg Glu Lys Glu Pro Ser Tyr Pro Met Pro Val Gln Glu Thr Gln	
133 138 143 148	
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Ala Pro Glu Ser Pro Gly Glu Asn Ser Glu Gln Ala Leu Gln Thr Leu	
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Ser Pro Arg Ala Ile Pro Arg Asn Pro Asp Gly Gly Pro Leu Glu Ser	
165 170 175 180	
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Ser Ser Asp Leu Ala Ala Leu Ser Pro Leu Thr Ser Ser Gly His Gln	
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261 266 271 276	
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Gln Ala Glu Pro Ile Ile Cys Ser Ser Gly Ala Glu Ala Pro Ala Asn	
277 282 287 292	
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Ser Leu Pro Ser Lys Val Pro Thr Thr Leu Met Pro Val Asn Thr Val	
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Ala Leu Lys Val Pro Ala Asn Pro Ala Ser Val Ser Thr Val Pro Ser	
309 314 319 324	
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Lys Leu Pro Thr Ser Ser Lys Pro Pro Gly Ala Val Pro Ser Asn Ala	
325 330 335 340	
ctc acc aat cca gca cca tcc aaa ttg ccc atc aac tca acc cgt gct	1231
Leu Thr Asn Pro Ala Pro Ser Lys Leu Pro Ile Asn Ser Thr Arg Ala	
341 346 351 356	
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Gly Met Val Pro Ser Lys Val Pro Thr Ser Met Val Leu Thr Lys Val	
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Leu Asp Ser Ser Ser Glu Asn Arg Gly Leu Gly Ser Glu Leu Ser Lys	
405 410 415 420	
cct ggc gtg ctg gca tcc cag gta gac agc ccg ttc tcg ggc tgc ttc	1471
Pro Gly Val Leu Ala Ser Gln Val Asp Ser Pro Phe Ser Gly Cys Phe	
421 426 431 436	
gag gat ctt gcc atc agt gcc agc acc tcc ttg ggc atg ggg ccc tgc	1519
Glu Asp Leu Ala Ile Ser Ala Ser Thr Ser Leu Gly Met Gly Pro Cys	
437 442 447 452	
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His Gly Pro Glu Glu Asn Glu Tyr Lys Ser Glu Gly Thr Phe Gly Ile	
453 458 463 468	
cac gtg gct gag aac ccc agc atc cag ctc ctg gag ggc aac cct ggg	1615
His Val Ala Glu Asn Pro Ser Ile Gln Leu Leu Glu Gly Asn Pro Gly	
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Phe Gln Glu Arg Glu Val Pro Cys His Arg Pro Ser Pro Gly Ala Leu	

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Trp Leu Gln Val Ala	Val Thr Gly Val Leu Val Val Thr Leu Leu Val			
517	522	527	532	
gtg ctg tac cgg cgg cgt ctg cac tag tgaag ccctgggctc ttccccccaa				1811
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taaaaatgta gattagataa actgcatcta ttacacccaa cagcaatgag cttttcatga	180
gttgaaaaaa agaaaaaacc c atg tcg gcc cca gcc ctg ggg cta cct gac	231
Met Ser Ala Pro Ala Leu Gly Leu Pro Asp	
1 5	
ctg aca aaa cct ttt aca ctc tat gtg tca gaa aga gaa aaa gtg gca	279
Leu Thr Lys Pro Phe Thr Leu Tyr Val Ser Glu Arg Glu Lys Val Ala	
11 16 21 26	
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Val Gly Val Leu Thr Gln Thr Val Gly Pro Trp Pro Arg Pro Val Ala	
27 32 37 42	
tat ctc tca aaa caa cta gat gag gtt tcc aaa cgc tgg ccc cca tgt	375
Tyr Leu Ser Lys Gln Leu Asp Glu Val Ser Lys Arg Trp Pro Pro Cys	
43 48 53 58	
cca aag tcc ctg gta gca ata gcc ctg tta gca caa gaa gca gat aag	423
Pro Lys Ser Leu Val Ala Ile Ala Leu Leu Ala Gln Glu Ala Asp Lys	
59 64 69 74	
cta act ctt aga caa aac cta aac ata aag tcc ccc tgt gct gtg gtg	471
Leu Thr Leu Arg Gln Asn Leu Asn Ile Lys Ser Pro Cys Ala Val Val	
75 80 85 90	
att tta ata aat acc aaa gga cac cat tag c taatgaatgc tagactagct	522
Ile Leu Ile Asn Thr Lys Gly His His *	

91

96

agataccaaa gcttgctctg tgaacatccc cgcataacca ttgaagtttg caacacctaa 582
 accccgccac cttcctcccg gtgtcagaga gccaggttaa acataactgt gtagaggat 642
 tggactcagt ttattctagt gggcctaacc accgagacca tccttaaaca tcagtagact 702
 gggagctgta catggatggg agcagcttca ccaacccctg caaagtgact ctgaagaaga 762
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 Met Gln Val
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 tcc agc ctc aat gag gtg aag att tac agc ctc agc tgc ggc aag tcc 162
 Ser Ser Leu Asn Glu Val Lys Ile Tyr Ser Leu Ser Cys Gly Lys Ser
 4 9 14 19
 ctt cct gag tgg ctt tct gat agg aag aag aga gcg cta cag aag aaa 210
 Leu Pro Glu Trp Leu Ser Asp Arg Lys Lys Arg Ala Leu Gln Lys Lys
 20 25 30 35
 gat gta gat gtc cgt agg aga att gaa ctt att cag gac ttt gaa atg 258
 Asp Val Asp Val Arg Arg Arg Ile Glu Leu Ile Gln Asp Phe Glu Met
 36 41 46 51
 cct act gtg tgt acc act att aag gtg tca aaa gat gga cag tac att 306
 Pro Thr Val Cys Thr Thr Ile Lys Val Ser Lys Asp Gly Gln Tyr Ile
 52 57 62 67
 tta gca act gga aca tat aaa cct cgg gtt cga tgt tat gac acc tat 354
 Leu Ala Thr Gly Thr Tyr Lys Pro Arg Val Arg Cys Tyr Asp Thr Tyr
 68 73 78 83
 caa tta tcc ttg aag ttt gaa agg tgt tta gat tca gaa gtt gtc acc 402
 Gln Leu Ser Leu Lys Phe Glu Arg Cys Leu Asp Ser Glu Val Val Thr
 84 89 94 99

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Phe Glu Ile Leu Ser Asp Asp Tyr Ser Lys Ile Val Phe Leu His Asn	
100 105 110 115	
gat aga tac att gaa ttt cat tcg caa tca ggt ttt tac tac aaa acc	498
Asp Arg Tyr Ile Glu Phe His Ser Gln Ser Gly Phe Tyr Tyr Lys Thr	
116 121 126 131	
aga ata cca aag ttt ggg aga gat ttc tct tac cac tat cca tcc tgt	546
Arg Ile Pro Lys Phe Gly Arg Asp Phe Ser Tyr His Tyr Pro Ser Cys	
132 137 142 147	
gac ttg tac ttt gtt ggt gca agt tct gaa gtt tat agg tta aac tta	594
Asp Leu Tyr Phe Val Gly Ala Ser Ser Glu Val Tyr Arg Leu Asn Leu	
148 153 158 163	
gaa caa gga cga tac ctg aat cct cta caa act gat gct gcg gag aat	642
Glu Gln Gly Arg Tyr Leu Asn Pro Leu Gln Thr Asp Ala Ala Glu Asn	
164 169 174 179	
aat gtt tgt gac ata aat tca gtg cat ggc ttg ttt gcc aca gga acc	690
Asn Val Cys Asp Ile Asn Ser Val His Gly Leu Phe Ala Thr Gly Thr	
180 185 190 195	
ata gag ggt aga gtg gag tgc tgg gac cca aga act cga aac aga gtt	738
Ile Glu Gly Arg Val Glu Cys Trp Asp Pro Arg Thr Arg Asn Arg Val	
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ggc ctg tta gac tgc gcc tta aac agt gtc aca gca gat tca gag ata	786
Gly Leu Leu Asp Cys Ala Leu Asn Ser Val Thr Ala Asp Ser Glu Ile	
212 217 222 227	
aac agt tta cca aca atc tct gct ttg aaa ttt aat ggt gcc ttg acc	834
Asn Ser Leu Pro Thr Ile Ser Ala Leu Lys Phe Asn Gly Ala Leu Thr	
228 233 238 243	
atg gca gtt gga aca acc aca ggg cag gtt tta tta tat gac ctt cga	882
Met Ala Val Gly Thr Thr Thr Gly Gln Val Leu Leu Tyr Asp Leu Arg	
244 249 254 259	
tct gat aag cca ttg cta gtt aaa gat cac cag tat ggg ctg ccc att	930
Ser Asp Lys Pro Leu Leu Val Lys Asp His Gln Tyr Gly Leu Pro Ile	
260 265 270 275	
aag tcc gtt cat ttc cag gat tca tta gat ctg att ttg tct gct gac	978
Lys Ser Val His Phe Gln Asp Ser Leu Asp Leu Ile Leu Ser Ala Asp	
276 281 286 291	
tct cga att gtc aag atg tgg aat aag aac tcc gga aaa ata ttt act	1026
Ser Arg Ile Val Lys Met Trp Asn Lys Asn Ser Gly Lys Ile Phe Thr	
292 297 302 307	
tcc ttg gag cca gag cat gac ctt aat gat gtt tgt ctc tac ccc aac	1074
Ser Leu Glu Pro Glu His Asp Leu Asn Asp Val Cys Leu Tyr Pro Asn	
308 313 318 323	
tca ggc atg ctt ctg acg gcc aat gaa acc ccc aag atg ggc atc tat	1122

Ser Gly Met Leu Leu Thr Ala Asn Glu Thr Pro Lys Met Gly Ile Tyr	
324 329 334 339	
tac att cca gtt ttg ggt cct gct cct cgg tgg tgt tcc ttc tta gac	1170
Tyr Ile Pro Val Leu Gly Pro Ala Pro Arg Trp Cys Ser Phe Leu Asp	
340 345 350 355	
aac ttg acc gaa gaa tta gaa gag aat cca gaa agc aca gtc tat gat	1218
Asn Leu Thr Glu Glu Leu Glu Glu Asn Pro Glu Ser Thr Val Tyr Asp	
356 361 366 371	
gat tat aaa ttt gtc acc aag aaa gac ctt gaa aat tta ggg ctc acc	1266
Asp Tyr Lys Phe Val Thr Lys Lys Asp Leu Glu Asn Leu Gly Leu Thr	
372 377 382 387	
cac ctc att gga tct cct ttc ctc cgg gca tat atg cat ggg ttt ttc	1314
His Leu Ile Gly Ser Pro Phe Leu Arg Ala Tyr Met His Gly Phe Phe	
388 393 398 403	
atg gat ata aga ctc tat cac aag gtg aaa ctg atg gta aat cca ttt	1362
Met Asp Ile Arg Leu Tyr His Lys Val Lys Leu Met Val Asn Pro Phe	
404 409 414 419	
gct tat gaa gaa tat agg aaa gat aaa ata cga cag aaa ata gaa gaa	1410
Ala Tyr Glu Glu Tyr Arg Lys Asp Lys Ile Arg Gln Lys Ile Glu Glu	
420 425 430 435	
aca cgt gca cag aga gtc cag tta aag aaa ttg cca aaa gtt aac aaa	1458
Thr Arg Ala Gln Arg Val Gln Leu Lys Lys Leu Pro Lys Val Asn Lys	
436 441 446 451	
gag ctg gca ctt aaa tta att gag gaa gaa gag gag aag cag aaa tct	1506
Glu Leu Ala Leu Lys Leu Ile Glu Glu Glu Glu Glu Lys Gln Lys Ser	
452 457 462 467	
aca tgg aaa aag aaa gtt aag agt ctt cct aat att ctc acc gat gat	1554
Thr Trp Lys Lys Lys Val Lys Ser Leu Pro Asn Ile Leu Thr Asp Asp	
468 473 478 483	
cga ttt aaa gtt atg ttt gag aac cct gac ttc caa gta gat gaa gag	1602
Arg Phe Lys Val Met Phe Glu Asn Pro Asp Phe Gln Val Asp Glu Glu	
484 489 494 499	
agt gaa gaa ttt agg ctt ctg aat cca ctt gtt tca aaa att agt gaa	1650
Ser Glu Glu Phe Arg Leu Leu Asn Pro Leu Val Ser Lys Ile Ser Glu	
500 505 510 515	
aaa agg aag aag aaa cta aga ctc tta gag caa caa gaa ctt cgt gaa	1698
Lys Arg Lys Lys Lys Leu Arg Leu Leu Glu Gln Gln Glu Leu Arg Glu	
516 521 526 531	
aaa gaa gag gag gaa gag ccg gaa gga aaa cca agt gat gca gaa agt	1746
Lys Glu Glu Glu Glu Glu Pro Glu Gly Lys Pro Ser Asp Ala Glu Ser	
532 537 542 547	
tcg gag agt tca gat gat gaa aaa gcc tgg gtt gaa gag gtc agg aag	1794
Ser Glu Ser Ser Asp Asp Glu Lys Ala Trp Val Glu Glu Val Arg Lys	

548	553	558	563	
caa cgc aga ctc ctc	cag cag gag gaa aaa	gtg aag cgg cag gaa cga		1842
Gln Arg Arg Leu Leu	Gln Gln Glu Glu Lys	Val Lys Arg Gln Glu Arg		
564	569	574	579	
ctc aag gag gac cag	cag aca gtc cta aag	ccc cag ttt tat gag atc		1890
Leu Lys Glu Asp Gln	Gln Thr Val Leu Lys	Pro Gln Phe Tyr Glu Ile		
580	585	590	595	
aaa gca gga gaa gaa	ttt aga agc ttc aaa	gat tct gcc aca aag cag		1938
Lys Ala Gly Glu Glu	Phe Arg Ser Phe Lys	Asp Ser Ala Thr Lys Gln		
596	601	606	611	
aaa ctg atg aac aaa	acc ctt gaa gat cgt	ttg aaa att gaa gca aaa		1986
Lys Leu Met Asn Lys	Thr Leu Glu Asp Arg	Leu Lys Ile Glu Ala Lys		
612	617	622	627	
aat ggg aca ttg agt	gta tcc gac acc acc	gtt ggc agc aaa caa ttg		2034
Asn Gly Thr Leu Ser	Val Ser Asp Thr Thr	Val Gly Ser Lys Gln Leu		
628	633	638	643	
aca ttc acg tta aag	agg tct gaa cag cag	aag aag caa cag gag gct		2082
Thr Phe Thr Leu Lys	Arg Ser Glu Gln Gln	Lys Lys Gln Gln Glu Ala		
644	649	654	659	
gag aaa ctg cat cga	caa gaa agg aaa aga	ctc cgt cgt tcg gcc gga		2130
Glu Lys Leu His Arg	Gln Glu Arg Lys Arg	Leu Arg Arg Ser Ala Gly		
660	665	670	675	
cac ctg aag tca aga	cac aaa aga gga cgg	tcg ttt cat tga tttggga		2179
His Leu Lys Ser Arg	His Lys Arg Gly Arg	Ser Phe His *		
676	681	686		
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gttaaacaca gacgaggaaa	cacacgtttt taaagttcat	gtacgttcctt gtacacagag		2299
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cccacggctt taatcatgaa	aaccaggctg gggttttttt	aatattgtga aatgtacacc		2479
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                               Met Gln Val
                               1

tcc agc ctc aat gag gtg aag att tac agc ctc agc tgc ggc aag tcc      162
Ser Ser Leu Asn Glu Val Lys Ile Tyr Ser Leu Ser Cys Gly Lys Ser
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ctt cct gag tgg ctt tct gat agg aag aag aga gcg cta cag aag aaa      210
Leu Pro Glu Trp Leu Ser Asp Arg Lys Lys Arg Ala Leu Gln Lys Lys
  20                      25                      30                      35

gat gta gat gtc cgt agg aga att gaa ctt att cag gac ttt gaa atg      258
Asp Val Asp Val Arg Arg Arg Ile Glu Leu Ile Gln Asp Phe Glu Met
  36                      41                      46                      51

cct act gtg tgt acc act att aag gtg tca aaa gat gga cag tac att      306
Pro Thr Val Cys Thr Thr Ile Lys Val Ser Lys Asp Gly Gln Tyr Ile
  52                      57                      62                      67

tta gca act gtt gtc acc ttt gaa att ttg tct gat gac tac tca aag      354
Leu Ala Thr Val Val Thr Phe Glu Ile Leu Ser Asp Asp Tyr Ser Lys
  68                      73                      78                      83

att gtc ttc tta cat aat gat aga tac att gaa ttt cat tcg caa tca      402
Ile Val Phe Leu His Asn Asp Arg Tyr Ile Glu Phe His Ser Gln Ser
  84                      89                      94                      99

ggt ttt tac tac aaa acc aga ata cca aag ttt ggg aga gat ttc tct      450
Gly Phe Tyr Tyr Lys Thr Arg Ile Pro Lys Phe Gly Arg Asp Phe Ser
 100                      105                      110                      115

tac cac tat cca tcc tgt gac ttg tac ttt gtt ggt gca agt tct gaa      498
Tyr His Tyr Pro Ser Cys Asp Leu Tyr Phe Val Gly Ala Ser Ser Glu
 116                      121                      126                      131

ggt tat agg tta aac tta gaa caa gga cga tac ctg aat cct cta caa      546
Val Tyr Arg Leu Asn Leu Glu Gln Gly Arg Tyr Leu Asn Pro Leu Gln
 132                      137                      142                      147

act gat gct gcg gag aat aat gtt tgt gac ata aat tca gtg cat ggc      594
Thr Asp Ala Ala Glu Asn Asn Val Cys Asp Ile Asn Ser Val His Gly
 148                      153                      158                      163

ttg ttt gcc aca gga acc ata gag ggt aga gtg gag tgc tgg gac cca      642
Leu Phe Ala Thr Gly Thr Ile Glu Gly Arg Val Glu Cys Trp Asp Pro
 164                      169                      174                      179

aga act cga aac aga gtt ggc ctg tta gac tgc gcc tta aac agt gtc      690
Arg Thr Arg Asn Arg Val Gly Leu Leu Asp Cys Ala Leu Asn Ser Val
 180                      185                      190                      195
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196 201 206 211	
ttt aat ggt gcc ttg acc atg gca gtt gga aca acc aca ggg cag gtt	786
Phe Asn Gly Ala Leu Thr Met Ala Val Gly Thr Thr Thr Gly Gln Val	
212 217 222 227	
tta tta tat gac ctt cga tct gat aag cca ttg cta gtt aaa gat cac	834
Leu Leu Tyr Asp Leu Arg Ser Asp Lys Pro Leu Leu Val Lys Asp His	
228 233 238 243	
cag tat ggg ctg ccc att aag tcc gtt cat ttc cag gat tca tta gat	882
Gln Tyr Gly Leu Pro Ile Lys Ser Val His Phe Gln Asp Ser Leu Asp	
244 249 254 259	
ctg att ttg tct gct gac tct cga att gtc aag atg tgg aat aag aac	930
Leu Ile Leu Ser Ala Asp Ser Arg Ile Val Lys Met Trp Asn Lys Asn	
260 265 270 275	
tcc gga aaa ata ttt act tcc ttg gag cca gag cat gac ctt aat gat	978
Ser Gly Lys Ile Phe Thr Ser Leu Glu Pro Glu His Asp Leu Asn Asp	
276 281 286 291	
gtt tgt ctc tac ccc aac tca ggc atg ctt ctg acg gcc aat gaa acc	1026
Val Cys Leu Tyr Pro Asn Ser Gly Met Leu Leu Thr Ala Asn Glu Thr	
292 297 302 307	
ccc aag atg ggc atc tat tac att cca gtt ttg ggt cct gct cct cgg	1074
Pro Lys Met Gly Ile Tyr Tyr Ile Pro Val Leu Gly Pro Ala Pro Arg	
308 313 318 323	
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Trp Cys Ser Phe Leu Asp Asn Leu Thr Glu Glu Leu Glu Glu Asn Pro	
324 329 334 339	
gaa agc aca gtc tat gat gat tat aaa ttt gtc acc aag aaa gac ctt	1170
Glu Ser Thr Val Tyr Asp Asp Tyr Lys Phe Val Thr Lys Lys Asp Leu	
340 345 350 355	
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Glu Asn Leu Gly Leu Thr His Leu Ile Gly Ser Pro Phe Leu Arg Ala	
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Tyr Met His Gly Phe Phe Met Asp Ile Arg Leu Tyr His Lys Val Lys	
372 377 382 387	
ctg atg gta aat cca ttt gct tat gaa gaa tat agg aaa gat aaa ata	1314
Leu Met Val Asn Pro Phe Ala Tyr Glu Glu Tyr Arg Lys Asp Lys Ile	
388 393 398 403	
cga cag aaa ata gaa gaa aca cgt gca cag aga gtc cag tta aag aaa	1362
Arg Gln Lys Ile Glu Glu Thr Arg Ala Gln Arg Val Gln Leu Lys Lys	
404 409 414 419	

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gag gag aag cag aaa tct aca tgg aaa aag aaa gtt aag agt ctt cct Glu Glu Lys Gln Lys Ser Thr Trp Lys Lys Lys Val Lys Ser Leu Pro 436 441 446 451	1458
aat att ctc acc gat gat cga ttt aaa gtt atg ttt gag aac cct gac Asn Ile Leu Thr Asp Asp Arg Phe Lys Val Met Phe Glu Asn Pro Asp 452 457 462 467	1506
ttc caa gta gat gaa gag agt gaa gaa ttt agg ctt ctg aat cca ctt Phe Gln Val Asp Glu Glu Ser Glu Glu Phe Arg Leu Leu Asn Pro Leu 468 473 478 483	1554
gtt tca aaa att agt gaa aaa agg aag aag aaa cta aga ctc tta gag Val Ser Lys Ile Ser Glu Lys Arg Lys Lys Lys Leu Arg Leu Leu Glu 484 489 494 499	1602
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cca agt gat gca gaa agt tcg gag agt tca gat gat gaa aaa gcc tgg Pro Ser Asp Ala Glu Ser Ser Glu Ser Ser Asp Asp Glu Lys Ala Trp 516 521 526 531	1698
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gtg aag cgg cag gaa cga ctc aag gag gac cag cag aca gtc cta aag Val Lys Arg Gln Glu Arg Leu Lys Glu Asp Gln Gln Thr Val Leu Lys 548 553 558 563	1794
ccc cag ttt tat gag atc aaa gca gga gaa gaa ttt aga agc ttc aaa Pro Gln Phe Tyr Glu Ile Lys Ala Gly Glu Glu Phe Arg Ser Phe Lys 564 569 574 579	1842
gat tct gcc aca aag cag aaa ctg atg aac aaa acc ctt gaa gat cgt Asp Ser Ala Thr Lys Gln Lys Leu Met Asn Lys Thr Leu Glu Asp Arg 580 585 590 595	1890
ttg aaa att gaa gca aaa aat ggg aca ttg agt gta tcc gac acc acc Leu Lys Ile Glu Ala Lys Asn Gly Thr Leu Ser Val Ser Asp Thr Thr 596 601 606 611	1938
gtt ggc agc aaa caa ttg aca ttc acg tta aag agg tct gaa cag cag Val Gly Ser Lys Gln Leu Thr Phe Thr Leu Lys Arg Ser Glu Gln Gln 612 617 622 627	1986
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ctc cgt cgt tcg gcc gga cac ctg aag tca aga cac aaa aga gga cgg	2082

Leu Arg Arg Ser Ala Gly His Leu Lys Ser Arg His Lys Arg Gly Arg
644 649 654 659

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Ser Phe His *
660

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gctgggaggg cccggcggcg acagcggagg cagagaggaa ggcggttctg agagcttcag 240
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Met Glu Ser Lys Met Gly Glu Leu Pro Leu Asp Ile Asn Ile
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Gln Glu Pro Arg Trp Asp Gln Ser Thr Phe Leu Gly Arg Ala Arg His
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Phe Phe Thr Val Thr Asp Pro Arg Asn Leu Leu Leu Ser Gly Ala Gln
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ctg gaa gct tct cgg aac atc gtg cag aac tac agg gcc ggc gtg gtg 432
Leu Glu Ala Ser Arg Asn Ile Val Gln Asn Tyr Arg Ala Gly Val Val
47 52 57 62

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Thr Pro Gly Ile Thr Glu Asp Gln Leu Trp Arg Ala Lys Tyr Val Tyr	
63 68 73 78	
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Asp Ser Ala Phe His Pro Asp Thr Gly Glu Lys Val Val Leu Ile Gly	
79 84 89 94	
cgc atg tca gcc cag gtg ccc atg aac atg acc atc act ggc tgc atg	576
Arg Met Ser Ala Gln Val Pro Met Asn Met Thr Ile Thr Gly Cys Met	
95 100 105 110	
ctc aca ttc tac agg aag acc cca acc gtg gtg ttc tgg cag tgg gtg	624
Leu Thr Phe Tyr Arg Lys Thr Pro Thr Val Val Phe Trp Gln Trp Val	
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Asn Gln Ser Phe Asn Ala Ile Val Asn Tyr Ser Asn Arg Ser Gly Asp	
127 132 137 142	
act ccc atc act gtg agg cag ctg ggg aca gcc tat gtg agt gcc acc	720
Thr Pro Ile Thr Val Arg Gln Leu Gly Thr Ala Tyr Val Ser Ala Thr	
143 148 153 158	
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Thr Gly Ala Val Ala Thr Ala Leu Gly Leu Lys Ser Leu Thr Lys His	
159 164 169 174	
ctg ccc ccc ttg gtc ggc aga ttt gtg ccc ttt gca gca gtg gca gct	816
Leu Pro Pro Leu Val Gly Arg Phe Val Pro Phe Ala Ala Val Ala Ala	
175 180 185 190	
gcc aac tgc atc aac atc ccc ctg atg agg cag aga gag ctg cag gtg	864
Ala Asn Cys Ile Asn Ile Pro Leu Met Arg Gln Arg Glu Leu Gln Val	
191 196 201 206	
ggc atc ccg gtg gct gat gag gca ggt cag agg ctt ggc tac tcg gtg	912
Gly Ile Pro Val Ala Asp Glu Ala Gly Gln Arg Leu Gly Tyr Ser Val	
207 212 217 222	
act gca gcc aag cag gga atc ttc cag gtg gtg att tca aga atc tgc	960
Thr Ala Ala Lys Gln Gly Ile Phe Gln Val Val Ile Ser Arg Ile Cys	
223 228 233 238	
atg gcg att cct gcc atg gcc atc cca cca ctg atc atg gac act ctg	1008
Met Ala Ile Pro Ala Met Ala Ile Pro Pro Leu Ile Met Asp Thr Leu	
239 244 249 254	
gag aag aaa gac ttc ctg aag gta ggc gac tgt acc tct ctt gtc ctg	1056
Glu Lys Lys Asp Phe Leu Lys Val Gly Asp Cys Thr Ser Leu Val Leu	
255 260 265 270	
gaa tgg gcg atg gct ggg aga agt gac cag gcc cca act ctc tct cca	1104
Glu Trp Ala Met Ala Gly Arg Ser Asp Gln Ala Pro Thr Leu Ser Pro	
271 276 281 286	

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gcc tcg cct gat tct cta aga ctt gcc agc cct tct cct gac ccc tgc      1152
Ala Ser Pro Asp Ser Leu Arg Leu Ala Ser Pro Ser Pro Asp Pro Cys
287                      292                      297                      302

acc gcc tcc tcc acc ttc gtt cat tca gca aga atg aac tgg gct ggg      1200
Thr Ala Ser Ser Thr Phe Val His Ser Ala Arg Met Asn Trp Ala Gly
303                      308                      313                      318

gtg aag gaa ctc tgc agg ggc agg agg aga gga caa agg aag gaa acc      1248
Val Lys Glu Leu Cys Arg Gly Arg Arg Arg Gly Gln Arg Lys Glu Thr
319                      324                      329                      334

aac ttc atc agt gtt act cca gtg gct tct gac aca cag aag ggg act      1296
Asn Phe Ile Ser Val Thr Pro Val Ala Ser Asp Thr Gln Lys Gly Thr
335                      340                      345                      350

gtc ata gtc atg ctt gat ctc atg ctc att ctt tta ccc cct agt gcc      1344
Val Ile Val Met Leu Asp Leu Met Leu Ile Leu Leu Pro Pro Ser Ala
351                      356                      361                      366

tcc ata ctg aga ggt aca cac ggg tga acacg cacacacaga catgaacagg      1396
Ser Ile Leu Arg Gly Thr His Gly *
367                      372

acacgaaagc aaagcacagg aacaagctct ggctcattca cagaatcatt tattcacaaa      1456

tgtattgagt gccatgcacc aggcattgtt tagggctgag gagatggcac tgaacacaat      1516

ggttatggcc cctgtcctca tgaagtttat agtctgatgc agaaaccaat aaacaaggag      1576

gcacccaata aatacattct tagaaagtgt aatatgtgct ttgtaggaaa gcaatggggg      1636

tagtgtaatt gagattcatg ggggagagct gtttagatag gatgatcaga gaaggggtgt      1696

attgcggccg ctctagagga tccaagctta cgt                                1729

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<210> 1017
<211> 1970
<212> DNA
<213> Homo sapiens

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<222> (194) .. (1402)

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<220>
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<222> (1) ... (1970)
<223> n = a,t,c or g

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cttgagcggg gttcagagcg tggccagttc tcgtctatct ggctgccttt agggagcggg      120

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cattagaatt gtaaattgta tttatggaaa taccttccaa tgctattgag aaattcaaatt 1734
ctctattgta tattgttctt tgatatgtgg cttagtttta tgttttgatt ttttttgcta 1794
ctgtgcaagt ttaatgtgaa taaaatcttt gtggaatgat gattttatgt ttaggtgagt 1854
gggtcatctg gaattttccc agtccccca ggaaaatgta nggcacnggg tatagcacc 1914
cttatgggta cctaaagccc cggncctaac cactggaacn ccaggttcnt ggatgg 1970

<210> 1018
<211> 1432
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (854) .. (1330)

<220>
<221> misc_feature
<222> (1) ... (1432)
<223> n = a,t,c or 'g'

<400> 1018
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gccatcagcc ctgtgggatg gcagccactg atttgtccta tgggaaccag totgccttca 120
agaaaagaca gaagtagaaa ggggtggtggc tgactgtctg acaaattggt atcaggtatg 180
caggaagtat atccttctcc aaaatatcat acttgcattc ccaggtagac acatttcctt 240
ctacacagaa ttatcttcag agcttcttaa agcaaataaa gcttgccttca aggactgagt 300
ccctagtcga attcccggaa ggagtggagc ctgtcatatt ggtgaggggt tgccttgaat 360
gtcatcccag tatttcaata ttgattaatt agtcttccct catggtccca actgcatagt 420
ttttattttg ttgagtgttc tgacacatgg taaggacat gaaagtatcc tttgagataa 480
tctttccatt catcagtgtt tatctagcat ctgctcaaga gtgtgctgca gtggagggaa 540
atcagatgac ctcccagtct ggttgtgtta catacaatca tgtgtaagaa gtgccattca 600
agccgtgtca ctggagggga ctgacagtga gtgagtgtgg ataaagagga cctcctgggg 660
tgggcaatgt gagccctcag actctgtagg tattgcattt tgcagtgaac actggtagac 720
atgttttgtg gctcaagcca gcatgtgtgt gatggttttag gattcagtga cttttgatga 780
tctggctgtg gacttcaccc caaaagaatg gactttactg gacccaactc agagaaacct 840

ctacagagat gtg	atg ctg gag aac tac aag aat ttg gcc aca gta gga	889
	Met Leu Glu Asn Tyr Lys Asn Leu Ala Thr Val Gly	
	1 5 10	
tat cag ctc ttc aaa ccc agt ctg atc tct tgg ctg gaa caa gaa gag	937	
Tyr Gln Leu Phe Lys Pro Ser Leu Ile Ser Trp Leu Glu Gln Glu Glu		
13 18 23 28		
tct agg aca gtg cag aga ggt gat ttc caa gct tca gaa tgg aaa gtg	985	
Ser Arg Thr Val Gln Arg Gly Asp Phe Gln Ala Ser Glu Trp Lys Val		
29 34 39 44		
caa ctt aaa acc aaa gag tta gcc ctt cag cag gat gtt ttg ggg gag	1033	
Gln Leu Lys Thr Lys Glu Leu Ala Leu Gln Gln Asp Val Leu Gly Glu		
45 50 55 60		
cca acc tcc agt ggg att caa atg ata gga agc cac aac gga ggg gag	1081	
Pro Thr Ser Ser Gly Ile Gln Met Ile Gly Ser His Asn Gly Gly Glu		
61 66 71 76		
gtc agt gat gtt aag caa tgt gga gat gtc tcc agt gaa cac tca tgc	1129	
Val Ser Asp Val Lys Gln Cys Gly Asp Val Ser Ser Glu His Ser Cys		
77 82 87 92		
ctt aag aca cat gtg aga act caa aat agt gag aac aca ttt gag tgt	1177	
Leu Lys Thr His Val Arg Thr Gln Asn Ser Glu Asn Thr Phe Glu Cys		
93 98 103 108		
tat ctg tat gga gta gac ttc ctt act ctg cac aag aaa acc tct act	1225	
Tyr Leu Tyr Gly Val Asp Phe Leu Thr Leu His Lys Lys Thr Ser Thr		
109 114 119 124		
gga gag caa cgt tct gta ttt agt cag tgt gga aaa gcc ttc agc ctg	1273	
Gly Glu Gln Arg Ser Val Phe Ser Gln Cys Gly Lys Ala Phe Ser Leu		
125 130 135 140		
aac cca gat gtt gtt tgc cag aag aac cgt tgc aca agg aag aag aaa	1321	
Asn Pro Asp Val Val Cys Gln Lys Asn Arg Cys Thr Arg Lys Lys Lys		
141 146 151 156		
gct ttt tga ttgcagt tgactctggg gaaatccttc cattaatcca ttcacacctt	1377	
Ala Phe *		
157		
ccagggacat ttaagaactc cacnatggga gaaagtctcc catggaaatg ggaag	1432	

<210> 1019

<211> 1477

<212> DNA

<213> Homo sapiens,

<220> /

<221> CDS

<222> (67)..(753)

<220>
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 <222> (1)...(1477)
 <223> n = a,t,c or g

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agaaca atg acc agg tat tgg gag ggc tgg tct caa cac att tca ctc 108
 Met Thr Arg Tyr Trp Glu Gly Trp Ser Gln His Ile Ser Leu
 1 5 10

ttc agg gag cca gtt gat aat ctg agt cct gag gag^h cgt gat gcc cgc 156
 Phe Arg Glu Pro Val Asp Asn Leu Ser Pro Glu Glu Arg Asp Ala Arg
 15 20 25 30

aca gtt ttc tgt atg cag tta gct gcc cga att cgg cct cga gat ctg 204
 Thr Val Phe Cys Met Gln Leu Ala Ala Arg Ile Arg Pro Arg Asp Leu
 31 36 41 46

gag gac ttt ttc tct gct gta ggc aag gtt cgc gat gta cgt atc att 252
 Glu Asp Phe Phe Ser Ala Val Gly Lys Val Arg Asp Val Arg Ile Ile
 47 52 57 62

tca gat cgg aac tca cgt cgt tct aag ggc att gcc tac gtg gaa ttc 300
 Ser Asp Arg Asn Ser Arg Arg Ser Lys Gly Ile Ala Tyr Val Glu Phe
 63 68 73 78

tgt gaa atc cag tct gtg cca ctg gcc att ggg ctg act ggg cag cgg 348
 Cys Glu Ile Gln Ser Val Pro Leu Ala Ile Gly Leu Thr Gly Gln Arg
 79 84 89 94

ttg ctg gga gtg cct atc att gta cag gct tca cag gca gag aaa aac 396
 Leu Leu Gly Val Pro Ile Ile Val Gln Ala Ser Gln Ala Glu Lys Asn
 95 100 105 110

cga ctg gca gcc atg gcc aac aac ctg caa aag ggc aat ggt gga cca 444
 Arg Leu Ala Ala Met Ala Asn Asn Leu Gln Lys Gly Asn Gly Gly Pro
 111 116 121 126

atg cgc ctc tat gtg ggt tcc ctg cac ttc aat atc act gaa gac atg 492
 Met Arg Leu Tyr Val Gly Ser Leu His Phe Asn Ile Thr Glu Asp Met
 127 132 137 142

ctc cgg ggc atc ttt gag ccc ttt ggt aaa att gat aat att gtc ctg 540
 Leu Arg Gly Ile Phe Glu Pro Phe Gly Lys Ile Asp Asn Ile Val Leu
 143 148 153 158

atg aag gac tca gat aca ggc cgc tct aaa ggt tat ggt ttc atc acg 588
 Met Lys Asp Ser Asp Thr Gly Arg Ser Lys Gly Tyr Gly Phe Ile Thr
 159 164 169 174

ttc tct gat tct gag tgt gcc cgg cgg gcc ctg gaa cag ttg aat ggg 636
 Phe Ser Asp Ser Glu Cys Ala Arg Arg Ala Leu Glu Gln Leu Asn Gly
 175 180 185 190

ttt gag ctt gct ggt cga cct atg agg gtt ggc cat gtg act gag cga	684
Phe Glu Leu Ala Gly Arg Pro Met Arg Val Gly His Val Thr Glu Arg	
191 196 201 206	
ctg gat ggt ggc aca gac atc act ttt cct gat ggg gac cag gag ctg	732
Leu Asp Gly Gly Thr Asp Ile Thr Phe Pro Asp Gly Asp Gln Glu Leu	
207 212 217 222	
gat ctg gga tca gca ggt tga cg ttttcagctc atggcaaaac tggcagaagg	785
Asp Leu Gly Ser Ala Gly *	
223 228	
cgctggaatc caactgccaa gcaactgctgc tgctgctgct gccgccgccg cccaggctgc	845
tgccttgcaa ctgaatggag cagttccctt gggggccctg aatccagcag ctctgactgc	905
tctgagtcca gccctgaacc ttgcctccca gtgtttccag ctctccagcc tctttacccc	965
ccagaccatg taaatcagtg gcacagtata ctgcctcctt gtgcctctgg attctgccac	1025
ttcacatcta ctcttccatg gcccatttc tccattttgt ggaccaagcc atcctgaggg	1085
catggacatt gtctctgagg aaattggggc cacccttaag ataccaagaa aagctcctgc	1145
ccatgggtccc actggaaatg gactctgctg agcaaagcca ccagttgaag agaacagaat	1205
ccacacctgc attgaatacc tgtttctcca tgtgtatcgt ctctgagatt accttcttgc	1265
cctttccaac accttagtga ttcctcaatt tctccccat tgggaaggcc atagggcatt	1325
aaactggaag gaactggacc tcttctcctt ttctgtgac ctttnaacct ttagtctgtt	1385
caagggaaaa cccttaggga cctttgaatc aagagggatt gagtttgtgg ggtgaacntg	1445
gaaggtggtc tttctgttac aggggcctgg gg	1477

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 <211> 3324
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (168) .. (1625)

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ggaagcaact gccgccgccg cctctttcat ctcttctggg gcaggggcca gggccaggtt	120
ttacacatcc ataagtagac ctttttgagg cctcaccagc caattca atg gcg tcc	176
Met Ala Ser	

tct tct act gtg cct ctg gga ttt cac tat gaa aca aag tat gtt gtt Ser Ser Thr Val Pro Leu Gly Phe His Tyr Glu Thr Lys Tyr Val Val 4 9 14 19	224
ctc agc tac ttg gga ctc ctc tct caa gag aag ctg caa gag caa cat Leu Ser Tyr Leu Gly Leu Leu Ser Gln Glu Lys Leu Gln Glu Gln His 20 25 30 35	272
ctt tcc tca ccc caa ggg gtt caa cta gat ata gct tca caa tct ctg Leu Ser Ser Pro Gln Gly Val Gln Leu Asp Ile Ala Ser Gln Ser Leu 36 41 46 51	320
gat caa gaa att tta tta aaa gtt aaa act gaa att gaa gaa gag cta Asp Gln Glu Ile Leu Leu Lys Val Lys Thr Glu Ile Glu Glu Glu Leu 52 57 62 67	368
aaa tct ctg gac aaa gaa att tct gaa gcc ttc acc agc aca ggc ttt Lys Ser Leu Asp Lys Glu Ile Ser Glu Ala Phe Thr Ser Thr Gly Phe 68 73 78 83	416
gac cgt cac act tct cca gtg ttc agc cct gcc aat cca gaa agc tca Asp Arg His Thr Ser Pro Val Phe Ser Pro Ala Asn Pro Glu Ser Ser 84 89 94 99	464
atg gaa gac tgc ttg gcc cat ctt gga gaa aaa gtg tcc cag gaa ctg Met Glu Asp Cys Leu Ala His Leu Gly Glu Lys Val Ser Gln Glu Leu 100 105 110 115	512
aaa gag cct ctc cat aaa gca ttg caa atg ctc ctg agc cag cca gtg Lys Glu Pro Leu His Lys Ala Leu Gln Met Leu Leu Ser Gln Pro Val 116 121 126 131	560
aca tat cag gca ttt cgg gaa tgt aca ctg gag acc aca gtt cat gcc Thr Tyr Gln Ala Phe Arg Glu Cys Thr Leu Glu Thr Thr Val His Ala 132 137 142 147	608
agc ggc tgg aat aag att ttg gtg cct ctg gtt ttg cta cga caa atg Ser Gly Trp Asn Lys Ile Leu Val Pro Leu Val Leu Leu Arg Gln Met 148 153 158 163	656
ctt ttg gaa ttg aca aga ctt ggt caa gaa cct ttg agc gca ctg ctg Leu Leu Glu Leu Thr Arg Leu Gly Gln Glu Pro Leu Ser Ala Leu Leu 164 169 174 179	704
cag ttt ggc gtg aca tac ctg gag gac tat tcg gca gag tac atc att Gln Phe Gly Val Thr Tyr Leu Glu Asp Tyr Ser Ala Glu Tyr Ile Ile 180 185 190 195	752
cag caa ggt ggc tgg ggc act gtg ttt agt ctt gag tca gag gag gag Gln Gln Gly Gly Trp Gly Thr Val Phe Ser Leu Glu Ser Glu Glu Glu 196 201 206 211	800
gaa tac cct gga atc act gca gaa gat agc aat gac att tac atc ctg Glu Tyr Pro Gly Ile Thr Ala Glu Asp Ser Asn Asp Ile Tyr Ile Leu 212 217 222 227	848
ccc agc gac aac tct gga caa gtc agt ccc cca gag tct cca act gtg	896

Pro Ser Asp Asn Ser Gly Gln Val Ser Pro Pro Glu Ser Pro Thr Val	
228 233 238 243	
acc act tcc tgg cag tct gag agc tta cct gtg tca ctg tcg gct agc	944
Thr Thr Ser Trp Gln Ser Glu Ser Leu Pro Val Ser Leu Ser Ala Ser	
244 249 254 259	
cag agt tgg cac aca gaa agc ctg cca gtg tca cta ggc cct gag tcc	992
Gln Ser Trp His Thr Glu Ser Leu Pro Val Ser Leu Gly Pro Glu Ser	
260 265 270 275	
tgg cag cag att gca atg gat cct gaa gaa gtg aaa agc tta gac agc	1040
Trp Gln Gln Ile Ala Met Asp Pro Glu Glu Val Lys Ser Leu Asp Ser	
276 281 286 291	
aac gga gct gga gag aag agt gag aac aac tcc tct aat tct gac att	1088
Asn Gly Ala Gly Glu Lys Ser Glu Asn Asn Ser Ser Asn Ser Asp Ile	
292 297 302 307	
gtg cac gtg gag aaa gaa gag gtg ccc gag ggc atg gaa gag gct gct	1136
Val His Val Glu Lys Glu Glu Val Pro Glu Gly Met Glu Glu Ala Ala	
308 313 318 323	
gtg gct tct gtg gtc ttg cca gcg cgg gag ctg caa gag gca ctt cct	1184
Val Ala Ser Val Val Leu Pro Ala Arg Glu Leu Gln Glu Ala Leu Pro	
324 329 334 339	
gaa gcc cca gct ccc ttg ctt cca cat atc act gcc acc tcc ctg ctg	1232
Glu Ala Pro Ala Pro Leu Leu Pro His Ile Thr Ala Thr Ser Leu Leu	
340 345 350 355	
ggg aca agg gaa cct gac aca gaa gtg atc aca gtt gag aaa tcc agc	1280
Gly Thr Arg Glu Pro Asp Thr Glu Val Ile Thr Val Glu Lys Ser Ser	
356 361 366 371	
cct gct aca tct ctg ttt gta gaa ctt gat gaa gaa gag gtg aaa gca	1328
Pro Ala Thr Ser Leu Phe Val Glu Leu Asp Glu Glu Glu Val Lys Ala	
372 377 382 387	
gca aca act gaa cct act gaa gtg gag gag gtg gtc ccc gca ctg gaa	1376
Ala Thr Thr Glu Pro Thr Glu Val Glu Glu Val Val Pro Ala Leu Glu	
388 393 398 403	
ccc aca gaa acg ctg ctg agt gag aag gag ata aac gca agg gaa gag	1424
Pro Thr Glu Thr Leu Leu Ser Glu Lys Glu Ile Asn Ala Arg Glu Glu	
404 409 414 419	
agc ctt gtg gaa gag ctg tcc cct gcc agc gag aag aag ccc gtg ccg	1472
Ser Leu Val Glu Glu Leu Ser Pro Ala Ser Glu Lys Lys Pro Val Pro	
420 425 430 435	
ccg tct gag ggc aag tct aga ctg tcc ccc gcc ggt gag atg aag ccc	1520
Pro Ser Glu Gly Lys Ser Arg Leu Ser Pro Ala Gly Glu Met Lys Pro	
436 441 446 451	
atg ccg ctg tct gag ggc aag tct ata ctg ctg ttt gga ggg gct gct	1568
Met Pro Leu Ser Glu Gly Lys Ser Ile Leu Leu Phe Gly Gly Ala Ala	

452	457	462	467	
gct gtt gcc atc ctg gca gtg gcc atc ggg gta gcc ctg gct ctg aga				1616
Ala Val Ala Ile Leu Ala Val Ala Ile Gly Val Ala Leu Ala Leu Arg				
468	473	478	483	
aag aaa tag gaggctt ttcagaagag aaagacagaa ggatgtaagg ttggagttgt				1672
Lys Lys *				
484				
attggctgga atttgaacct ccagcagctg tctggacatt tgtggaacac tctgggataa				1732
ttggggactt ctgctcaaca tggcagtggc atgttaggca tgttagggct tgaggtgggg				1792
cattcacatt catctgactg taaatcccaa gggcctccgc tcatgctaaa ttgagaatct				1852
taggggtaaa gcaccccctc caggaccggg tttctcagcc ttggcactag tgctgttctg				1912
accattctct gtgttggggc tgtcctgtgt gtggtgggct ccaccacta gatgccagt				1972
tcaccccctc ccagagatga caaacgaaaa tgtctctaga cattgccaaa tgtcccggt				2032
gaacatcccc tattgagacc cactgcttta gcgagagagg gtttacttag gaagaattgg				2092
gatagaaatt cccagctgag agaacttagc tgtgggctcc tcagctactg acttcttagc				2152
tcttaatccc cttagaatct catctttctc gatgagcagg ctctgcaccc actctttttt				2212
tgccccccgc cctcatcctg gagtgtgagg gtgctcgccc gtactctcag ctgcctctca				2272
gggactgcac tgttcctctt cacccccagg ttccctgctaa gatcccacgg gcgagggctt				2332
gctctggact cagtctgtca agtccccgaa gcttcctgca gctccacctt gtaaaaatgc				2392
tgcccttggg aatcttcgaa atatgtacac agagaaaatc acatgaagga gacctgggg				2452
ccccacttgt gaggcaact gcaagtaact ctggctagag agacacatgt gtcttgtgtc				2512
aaggcaggag gataaccggt atgaccttct gaggtctctt cagccctttt cgctagtgg				2572
caccaccac catggttact tgccagcaac atctctattg ctggatgggt cctgtctata				2632
accttgggct agtatatttt ttccaatatg ggaccttagt cttactactg atgagttcta				2692
tgggtctctt gctagggggg aaggattttt attcttgggc ttatagagcc agttagatca				2752
taattcttat gaaatagaga gtgtcctaaa tatcactgaa ataaaaagta ggaaaaagaa				2812
gcttgaatct taagactgag gctgctctgc agattctagt ttggctttca gagttcaaga				2872
gtggtggcat cttcacctga attcttcaat gccagggtaa taaacaaaaa tagtccta				2932
cagtatatgc tagttgagca tcggcataat tttctttcct ctggctgatc ccagccctaa				2992
aggaagggtg gacctgtgtc tttccagccc taaaggaagg gtagaccggt gtctttccag				3052
ccctaaagga agggcagacc cgtgtctttc catgcccag ggccacgacg tcactatgca				3112

gggcacacgt ggcttggttt aaaaagggtca tcttagattt atcttagtaa atgtaataaa 3172
 ttatTTTTTT gatcttgaaa ttataataa aaatacttta cctaccctga tcaccaaAAC 3232
 ctgatgtttt aaatgtgctt tctttttgaa atttatgttt tcaaataaaa tctccctaaa 3292
 gcaatattta aaaattggtc aaaaaaaaaa aa 3324

<210> 1021
 <211> 1497
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (79)..(762)

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 atactggggtt atgaagtg atg gaa gaa aga gct aaa ttt act gta tat aaa 111
 Met Glu Glu Arg Ala Lys Phe Thr Val Tyr Lys
 1 5
 ata cta gta aag aaa acc cca gaa gaa agc tgg gta gtt ttc aga aga 159
 Ile Leu Val Lys Lys Thr Pro Glu Glu Ser Trp Val Val Phe Arg Arg
 12 17 22 27
 tac act gac ttc tct agg ctt aat gac aaa tta aaa gag atg ttt cca 207
 Tyr Thr Asp Phe Ser Arg Leu Asn Asp Lys Leu Lys Glu Met Phe Pro
 28 33 38 43
 ggt ttt cga cta gca ctt cct cca aaa cgc tgg ttt aaa gat aat tac 255
 Gly Phe Arg Leu Ala Leu Pro Pro Lys Arg Trp Phe Lys Asp Asn Tyr
 44 49 54 59
 aat gct gac ttt tta gaa gac aga caa tta gga tta caa gcg ttt ctt 303
 Asn Ala Asp Phe Leu Glu Asp Arg Gln Leu Gly Leu Gln Ala Phe Leu
 60 65 70 75
 caa aat tta gta gct cac aag gac att gct aac tgc ctt gca gtg aga 351
 Gln Asn Leu Val Ala His Lys Asp Ile Ala Asn Cys Leu Ala Val Arg
 76 81 86 91
 gaa ttt ctt tgt ttg gat gat cca ccg ggt cca ttt gat agc cta gag 399
 Glu Phe Leu Cys Leu Asp Asp Pro Pro Gly Pro Phe Asp Ser Leu Glu
 92 97 102 107
 gaa agc agg gca ttc tgt gaa act tta gaa gag aca aac tac cgc tta 447
 Glu Ser Arg Ala Phe Cys Glu Thr Leu Glu Glu Thr Asn Tyr Arg Leu
 108 113 118 123
 cag aaa gaa cta ctt gaa aaa caa aag gag atg gaa tca cta aag aaa 495

Gln Lys Glu Leu Leu Glu Lys Gln Lys Glu Met Glu Ser Leu Lys Lys	
124 129 134 139	
ctg ctc agt gag aag caa ctt cat ata gac act tta gag aac aga atc	543
Leu Leu Ser Glu Lys Gln Leu His Ile Asp Thr Leu Glu Asn Arg Ile	
140 145 150 155	
aga aca ttg tct tta gaa cct gaa gaa tca ctg gat gtg tca gaa aca	591
Arg Thr Leu Ser Leu Glu Pro Glu Glu Ser Leu Asp Val Ser Glu Thr	
156 161 166 171	
gaa ggt gaa cag atc cta aag gtg gag tcc tct gca ctt gag gtt gat	639
Glu Gly Glu Gln Ile Leu Lys Val Glu Ser Ser Ala Leu Glu Val Asp	
172 177 182 187	
caa gat gtc ctg gat gaa gaa tct aga gct gat aat aaa cca tgc tta	687
Gln Asp Val Leu Asp Glu Glu Ser Arg Ala Asp Asn Lys Pro Cys Leu	
188 193 198 203	
agt ttt agt gaa cct gaa aat gct gta tca gag ata gaa gta gca gaa	735
Ser Phe Ser Glu Pro Glu Asn Ala Val Ser Glu Ile Glu Val Ala Glu	
204 209 214 219	
gtg gca tat gat gct gaa gaa gac taa tgtat cacaagcagt tccctccatt	787
Val Ala Tyr Asp Ala Glu Glu Asp *	
220 225	
tagactattc aaaaatttag aagagtggca aatactatatt taaaagaaga accaagaact	847
gtaaaacata tagaaaagag caagaatgca catgtataaa gtttacataa agaagttttt	907
ttaagttatt gagataggaa atatattcac tgctgctttt aattgtattt tatccaatta	967
catttaatac actaaaaaaaa atcttggttg aattctgtta tcaaggccca cattcttaaa	1027
tactgtgcat aaattattat ggtgttttgc ctatatattg ctccaaacta ctgtgtatat	1087
atgtatgtgt gttaaatacac caattatatt aatcaaatgg aaattaattg catgttacta	1147
tctgggtgat atattcttct ttatatctct gacatgacat attttcatta atagtttaaa	1207
tcagtgacca tcataataaa gataaaattt agttgagttt ttaatgttta catgtttaca	1267
tctctaaata aaatttgctt atttgaaatg ttaatgctct ttagaaaaat gactttctag	1327
taccaaagga aaactacttg aaagagctgt aatcatatag ctaaagtgat aagatagcct	1387
tgattttaag tcgacgcggc cgcgaattcg gatcctcgag agatctcttt ttttgggttt	1447
ggtggggtat cttcatcatc gaatagatag ttaatcatca cgcgtcgaag	1497

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<213> Homo sapiens

<220>

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<222> (41)..(1084)

<400> 1022

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                                         Met Ala Ala Thr Leu
                                         1

gga ccc ctt ggg tcg tgg cag cag tgg cgg cga tgt ttg tcg gct cgg      103
Gly Pro Leu Gly Ser Trp Gln Gln Trp Arg Arg Cys Leu Ser Ala Arg
  6                      11                      16      21

gat ggg tcc agg atg tta ctc ctt ctt ctt ttg ttg ggg tct ggg cag      151
Asp Gly Ser Arg Met Leu Leu Leu Leu Leu Leu Leu Gly Ser Gly Gln
 22                      27                      32      37

ggg cca cag caa gtc ggg gcg ggt caa acg ttc gag tac ttg aaa cgg      199
Gly Pro Gln Gln Val Gly Ala Gly Gln Thr Phe Glu Tyr Leu Lys Arg
 38                      43                      48      53

gag cac tcg ctg tcg aag ccc tac cag ggt gtg ggc aca ggc agt tcc      247
Glu His Ser Leu Ser Lys Pro Tyr Gln Gly Val Gly Thr Gly Ser Ser
 54                      59                      64      69

tca ctg tgg aat ctg atg ggc aat gcc atg gtg atg acc cag tat atc      295
Ser Leu Trp Asn Leu Met Gly Asn Ala Met Val Met Thr Gln Tyr Ile
 70                      75                      80      85

cgc ctt acc cca gat atg caa agt aaa cag ggt gcc ttg tgg aac cgg      343
Arg Leu Thr Pro Asp Met Gln Ser Lys Gln Gly Ala Leu Trp Asn Arg
 86                      91                      96     101

gtg cca tgt ttc ctg aga gac tgg gag ttg cag gtg cac ttc aaa atc      391
Val Pro Cys Phe Leu Arg Asp Trp Glu Leu Gln Val His Phe Lys Ile
102                      107                      112     117

cat gga caa gga aag aag aat ctg cat ggg gat ggc ttg gca atc tgg      439
His Gly Gln Gly Lys Lys Asn Leu His Gly Asp Gly Leu Ala Ile Trp
118                      123                      128     133

tac aca aag gat cgg atg cag cca ggg cct gtg ttt gga aac atg gac      487
Tyr Thr Lys Asp Arg Met Gln Pro Gly Pro Val Phe Gly Asn Met Asp
134                      139                      144     149

aaa ttt gtg ggg ctg gga gta ttt gta gac acc tac ccc aat gag gag      535
Lys Phe Val Gly Leu Gly Val Phe Val Asp Thr Tyr Pro Asn Glu Glu
150                      155                      160     165

aag cag caa gag cgg gta ttc ccc tac atc tca gcc atg gtg aac aac      583
Lys Gln Gln Glu Arg Val Phe Pro Tyr Ile Ser Ala Met Val Asn Asn
166                      171                      176     181

ggc tcc ctc agc tat gat cat gag cgg gat ggg cgg cct aca gag ctg      631
Gly Ser Leu Ser Tyr Asp His Glu Arg Asp Gly Arg Pro Thr Glu Leu
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182	187	192	197	
gga ggc tgc aca gcc att gtc cgc aat ctt cat tac gac acc ttc ctg				679
Gly Gly Cys Thr Ala Ile Val Arg Asn Leu His Tyr Asp Thr Phe Leu				
198	203	208	213	
gtg att cgc tac gtc aag agg cat ttg acg ata atg atg gat att gat				727
Val Ile Arg Tyr Val Lys Arg His Leu Thr Ile Met Met Asp Ile Asp				
214	219	224	229	
ggc aag cat gag tgg agg gac tgc att gaa gtg ccc gga gtc cgc ctg				775
Gly Lys His Glu Trp Arg Asp Cys Ile Glu Val Pro Gly Val Arg Leu				
230	235	240	245	
ccc cgc ggc tac tac ttc ggc acc tcc tcc atc act ggg gat ctc tca				823
Pro Arg Gly Tyr Tyr Phe Gly Thr Ser Ser Ile Thr Gly Asp Leu Ser				
246	251	256	261	
gat aat cat gat gtc att tcc ttg aag ttg ttt gaa ctg aca gtg gag				871
Asp Asn His Asp Val Ile Ser Leu Lys Leu Phe Glu Leu Thr Val Glu				
262	267	272	277	
aga acc cca gaa gag gaa aag ctc cat cga gat gtg ttc ttg ccc tca				919
Arg Thr Pro Glu Glu Glu Lys Leu His Arg Asp Val Phe Leu Pro Ser				
278	283	288	293	
gtg gac aat atg aag ctg cct gag atg aca gct cca ctg ccg ccc ctg				967
Val Asp Asn Met Lys Leu Pro Glu Met Thr Ala Pro Leu Pro Pro Leu				
294	299	304	309	
agt ggc ctg gcc ctc ttc ctc atc gtc ttt ttc tcc ctg gtg ttt tct				1015
Ser Gly Leu Ala Leu Phe Leu Ile Val Phe Phe Ser Leu Val Phe Ser				
310	315	320	325	
gta ttt gcc ata gtc att ggt atc ata ctc tac aac aaa tgg cag gaa				1063
Val Phe Ala Ile Val Ile Gly Ile Ile Leu Tyr Asn Lys Trp Gln Glu				
326	331	336	341	
cag agc cga aag cgc ttc tac tg agccctcctg ctgccaccac ttttgtgact				1116
Gln Ser Arg Lys Arg Phe Tyr				
342	347			
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atcccagttg aatgctgtct tccaagaaca gaagaaa atg atc cag gcc cag gaa 175
Met Ile Gln Ala Gln Glu
1

tcc ata aca ctg gag gat gtg gct gtg gac ttc act tgg gag gag tgg 223
Ser Ile Thr Leu Glu Asp Val Ala Val Asp Phe Thr Trp Glu Glu Trp
7 12 17 22

caa ctc ctg ggc gct gct cag aag gac ctg tac cgg gat gtg atg ttg 271
Gln Leu Leu Gly Ala Ala Gln Lys Asp Leu Tyr Arg Asp Val Met Leu
23 28 33 38

gag aac tac agc aac ctg gtg gca gtg ggg tat caa gcc agc aaa ccg 319
Glu Asn Tyr Ser Asn Leu Val Ala Val Gly Tyr Gln Ala Ser Lys Pro
39 44 49 54

gat gca ctc ttc aag ttg gaa caa gga gaa caa ctg tgg aca att gaa 367
Asp Ala Leu Phe Lys Leu Glu Gln Gly Glu Gln Leu Trp Thr Ile Glu
55 60 65 70

gat gga atc cac agt gga gcc tgt tca gag tct tgc tct gtg ccc agg 415
Asp Gly Ile His Ser Gly Ala Cys Ser Glu Ser Cys Ser Val Pro Arg
71 76 81 86

ctg gag cgc aat ggt gtg aac ttg gct cac cgc aac ctc cac ctc ctg 463
Leu Glu Arg Asn Gly Val Asn Leu Ala His Arg Asn Leu His Leu Leu
87 92 97 102

gat tca agc gat tct tgt gcc tat ccc caa cac cag cac cat acc tgg 511
Asp Ser Ser Asp Ser Cys Ala Tyr Pro Gln His Gln His His Thr Trp
103 108 113 118

cac acg gtg atc att caa cat atg gaa agt tga tcatgtgc tggagcgctt 562
His Thr Val Ile Ile Gln His Met Glu Ser *
119 124 129

gcagagtga agcctggtga acagaaggaa accatgtcat gaacatgatg catttgaaaa 622

tattgttcat tgcagcaaaa gtcagtttct gttagggcaa aatcatgata tatttgactt 682

acgtggaaaa agtttgaaat ccaatttaac tttagttaac cagagcaaaag gctatgaaat 742

aaagaactct gttgagttta ctggaaatgg ggactccttt cttcatgcta accatgaacg 802

acttcatact gcaattaaat tccctgcaag tcaaaaactc atcagcacta agtcccaatt 862

catcagtccc aagcatcaga aaacacgaaa attagagaag catcatgtgt gcagtgaatg 922

tgggaaagcc ttcatcaaga agtcttggct aactgatcac caggtaatgc atacaggaga 982

gaaacccac agatgcagtc tatgtgagaa agccttctcc agaaagttca tgcttactga 1042

acatcagcga actcatacag gagaaaaacc ttatgaatgc cctgaatgtg gcaaagcctt 1102

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tcatcctatt aaaatgtatg ctgtgataca caggcaaatt tgatgttaac ctaagcacat 2062
acacagcaat tgctcgactg tgtcaattaa atgagtaaag gaagcccaag tacttttaag 2122
tggaggaaat gaagtactgt gaatttttaa aacagatgag ataattggtg tcgggagtg 2182
tgcagtgact gaaaagcttc ataaggggca gttggtggga aagggttaat actgtaatgg 2242
tggaatgtgg gacacatatg tgtcaattca gtttccttag accagtgccg gtgtggagga 2302
ttaattgaaa accaggacca taaactttca gaactttgta ttatgcagag ggatctgtga 2362
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<212> DNA
<213> Homo sapiens

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<222> (179)..(1180)

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cagattacct ggctggtgtt tgcttgttct ggagtgatct tctgactgga aaagaact 178
atg tca tgg atc aag gaa gga gag ctg tca ctt tgg gag cgg ttc tgt 226
Met Ser Trp Ile Lys Glu Gly Glu Leu Ser Leu Trp Glu Arg Phe Cys
1 5 10 15
gcc aac atc ata aag gca ggc cca atg ccg aaa cac att gca ttc ata 274
Ala Asn Ile Ile Lys Ala Gly Pro Met Pro Lys His Ile Ala Phe Ile
17 22 27 32
atg gac ggg aac cgt cgc tat gcc aag aag tgc cag gtg gag cgg cag 322
Met Asp Gly Asn Arg Arg Tyr Ala Lys Lys Cys Gln Val Glu Arg Gln
33 38 43 48
gaa ggc cac tca cag ggc ttc aac aag cta gct gag act ctg cgg tgg 370
Glu Gly His Ser Gln Gly Phe Asn Lys Leu Ala Glu Thr Leu Arg Trp
49 54 59 64
tgt ttg aac ctg ggc atc cta gag gtg aca gtc tac gca ttc agc att 418
Cys Leu Asn Leu Gly Ile Leu Glu Val Thr Val Tyr Ala Phe Ser Ile
65 70 75 80
gag aac ttc aaa cgc tcc aag agt gag gta gac ggg ctt atg gat ctg 466
Glu Asn Phe Lys Arg Ser Lys Ser Glu Val Asp Gly Leu Met Asp Leu
81 86 91 96
gcc cgg cag aag ttc agc cgc ttg atg gaa gaa aag gag aaa ctg cag 514
Ala Arg Gln Lys Phe Ser Arg Leu Met Glu Glu Lys Glu Lys Leu Gln
97 102 107 112
aag cat ggg gtg tgt atc cgg gtc ctg ggc gat ctg cac ttg ttg ccc 562
Lys His Gly Val Cys Ile Arg Val Leu Gly Asp Leu His Leu Leu Pro
113 118 123 128
ttg gat ctc cag gag ctg att gca caa gct gta cag gcc acg aag aac 610
Leu Asp Leu Gln Glu Leu Ile Ala Gln Ala Val Gln Ala Thr Lys Asn
129 134 139 144
tac aac aag tgt ttc ctg aat gtc tgt ttt gca tac aca tcc cgt cat 658
Tyr Asn Lys Cys Phe Leu Asn Val Cys Phe Ala Tyr Thr Ser Arg His
145 150 155 160
gag atc agc aat gct gtg aga gag atg gcc tgg ggg gtg gag caa ggc 706
Glu Ile Ser Asn Ala Val Arg Glu Met Ala Trp Gly Val Glu Gln Gly
161 166 171 176
ctg ttg gat ccc agt gat atc tct gag tct ctg ctt gat aag tgc ctc 754
Leu Leu Asp Pro Ser Asp Ile Ser Glu Ser Leu Leu Asp Lys Cys Leu
177 182 187 192
tat acc aac cgc tct cct cat cct gac atc ttg ata cgg act tct gga 802
Tyr Thr Asn Arg Ser Pro His Pro Asp Ile Leu Ile Arg Thr Ser Gly
193 198 203 208

gaa gtg cgg ctg agt gac ttc ttg cta tgg cag acc tct cac tcc tgc	850
Glu Val Arg Leu Ser Asp Phe Leu Leu Trp Gln Thr Ser His Ser Cys	
209 214 219 224	
ctg gtg ttc caa ccc gtt ctg tgg cca gag tat aca ttt tgg aac ctc	898
Leu Val Phe Gln Pro Val Leu Trp Pro Glu Tyr Thr Phe Trp Asn Leu	
225 230 235 240	
ttc gag gcc atc ctg cag ttc cag atg aac cat agc gtg ctt cag aag	946
Phe Glu Ala Ile Leu Gln Phe Gln Met Asn His Ser Val Leu Gln Lys	
241 246 251 256	
gcc cga gac atg tat gca gag gag cgg aag agg cag cag ctg gag agg	994
Ala Arg Asp Met Tyr Ala Glu Glu Arg Lys Arg Gln Gln Leu Glu Arg	
257 262 267 272	
gac cag gct aca gtg aca gag cag ctg ctg cga gag ggg ctc caa gcc	1042
Asp Gln Ala Thr Val Thr Glu Gln Leu Leu Arg Glu Gly Leu Gln Ala	
273 278 283 288	
agt ggg gac gcc cag ctc cga agg aca cgc ttg cac aaa ctc tcg gcc	1090
Ser Gly Asp Ala Gln Leu Arg Arg Thr Arg Leu His Lys Leu Ser Ala	
289 294 299 304	
aga cgg gaa gag cga gtc caa ggc ttc ctg cag gcc ttg gaa ctc aag	1138
Arg Arg Glu Glu Arg Val Gln Gly Phe Leu Gln Ala Leu Glu Leu Lys	
305 310 315 320	
cga gct gac tgg ctg gcc cgt ctg ggc act gca tca gcc tga atgaggc	1187
Arg Ala Asp Trp Leu Ala Arg Leu Gly Thr Ala Ser Ala *	
321 326 331	
tgGCCacctg ccactttgcc ctgcctctctg cctccagggc tccactcccc ttccttttct	1247
tggtgaaagg cacctccttt cctgataatg aatggtgttc cctttgcttg gctggggagc	1307
ccccaggcc aggtttgctg gccataaata cctttgggct gcctgggaca ggctccttag	1367
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cagattacct ggctgggtgtt tgcttgttct ggagtgatct tctgactgga aaagaact	178
atg tca tgg atc aag gaa gga gag ctg tca ctt tgg gag cgg ttc tgt	226
Met Ser Trp Ile Lys Glu Gly Glu Leu Ser Leu Trp Glu Arg Phe Cys	
1 5 10 15	
gcc aac atc ata aag gca ggc cca atg ccg aaa cac att gca ttc ata	274
Ala Asn Ile Ile Lys Ala Gly Pro Met Pro Lys His Ile Ala Phe Ile	
17 22 27 32	
atg gac ggg aac cgt cgc tat gcc aag aag tgc cag gtg gag cgg cag	322
Met Asp Gly Asn Arg Arg Tyr Ala Lys Lys Cys Gln Val Glu Arg Gln	
33 38 43 48	
gaa ggc cac tca cag ggc ttc aac aag cta gct gag act ctg cgg tgg	370
Glu Gly His Ser Gln Gly Phe Asn Lys Leu Ala Glu Thr Leu Arg Trp	
49 54 59 64	
tgt ttg aac ctg ggc atc cta gag gtg aca gtc tac gca ttc agc att	418
Cys Leu Asn Leu Gly Ile Leu Glu Val Thr Val Tyr Ala Phe Ser Ile	
65 70 75 80	
gag aac ttc aaa cgc tcc aag agt gag gta gac ggg ctt atg gat ctg	466
Glu Asn Phe Lys Arg Ser Lys Ser Glu Val Asp Gly Leu Met Asp Leu	
81 86 91 96	
gcc cgg cag aag ttc agc cgc ttg atg gaa gaa aag gag aaa ctg cag	514
Ala Arg Gln Lys Phe Ser Arg Leu Met Glu Glu Lys Glu Lys Leu Gln	
97 102 107 112	
aag cat ggg gtg tgt atc cgg gtc ctg ggc gat ctg cac ttg ttg ccc	562
Lys His Gly Val Cys Ile Arg Val Leu Gly Asp Leu His Leu Leu Pro	
113 118 123 128	
ttg gat ctc cag gag ctg att gca caa gct gta cag gcc acg aag aac	610
Leu Asp Leu Gln Glu Leu Ile Ala Gln Ala Val Gln Ala Thr Lys Asn	
129 134 139 144	
tac aac aat gat atc tct gag tct ctg ctt gat aag tgc ctc tat acc	658
Tyr Asn Asn Asp Ile Ser Glu Ser Leu Leu Asp Lys Cys Leu Tyr Thr	
145 150 155 160	
aac cgc tct cct cat cct gac atc ttg ata cgg act tct gga gaa gtg	706
Asn Arg Ser Pro His Pro Asp Ile Leu Ile Arg Thr Ser Gly Glu Val	
161 166 171 176	
cgg ctg agt gac ttc ttg cta tgg cag acc tct cac tcc tgc ctg gtg	754
Arg Leu Ser Asp Phe Leu Leu Trp Gln Thr Ser His Ser Cys Leu Val	
177 182 187 192	
ttc caa ccc gtt ctg tgg cca gag tat aca ttt tgg aac ctc ttc gag	802
Phe Gln Pro Val Leu Trp Pro Glu Tyr Thr Phe Trp Asn Leu Phe Glu	
193 198 203 208	
gcc atc ctg cag ttc cag atg aac cat agc gtg ctt cag aag gcc cga	850

Ala Ile Leu Gln Phe Gln Met Asn His Ser Val Leu Gln Lys Ala Arg	
209 214 219 224	
gac atg tat gca gag gag cgg aag agg cag cag ctg gag agg gac cag	898
Asp Met Tyr Ala Glu Glu Arg Lys Arg Gln Gln Leu Glu Arg Asp Gln	
225 230 235 240	
gct aca gtg aca gag cag ctg ctg cga gag ggg ctc caa gcc agt ggg	946
Ala Thr Val Thr Glu Gln Leu Leu Arg Glu Gly Leu Gln Ala Ser Gly	
241 246 251 256	
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Asp Ala Gln Leu Arg Arg Thr Arg Leu His Lys Leu Ser Ala Arg Arg	
257 262 267 272	
gaa gag cga gtc caa ggc ttc ctg cag gcc ttg gaa ctc aag cga gct	1042
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273 278 283 288	
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Asp Trp Leu Ala Arg Leu Gly Thr Ala Ser Ala *	
289 294 299	
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aggcacctcc tttcctgata atgaatggtg ttccctttgc ttggctgggg agccccccag	1212
gccaggtttg ctggccataa ataccttttg gctgcctggg acaggctcct taggaggatt	1272
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aagcaaaggg cccaactct tcaccaaaaa aaaaaaa	1369

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ggcgggtgatc accgtgaggc agcaccg atg ggt ctt ccc caa ccg agg ctt	171
Met Gly Leu Pro Gln Pro Arg Leu	
1 1 5	
cct gca cca gct ctg cag gct gga cca gca act gcg ggg tgc cgg cca	219
Pro Ala Pro Ala Leu Gln Ala Gly Pro Ala Thr Ala Gly Cys Arg Pro	
9 14 19 24	

gag ctg agg ggc cag agc tgg tcc tta ctc cct gcc atg ggg ctc tgc	267
Glu Leu Arg Gly Gln Ser Trp Ser Leu Leu Pro Ala Met Gly Leu Cys	
25 30 35 40	
cac ttt gcc acc ctg gca ctg atc ctg ctg gtg ctg ctg gag gct ctg	315
His Phe Ala Thr Leu Ala Leu Ile Leu Leu Val Leu Leu Glu Ala Leu	
41 46 51 56	
gcc cag gcg gac aca cag aag atg gtg gaa gcc cag cgt ggg gtc ggc	363
Ala Gln Ala Asp Thr Gln Lys Met Val Glu Ala Gln Arg Gly Val Gly	
57 62 67 72	
cct aga gcc tgc tac tcc atc tgg ctc ctc ctg gcg cct aca ccc cct	411
Pro Arg Ala Cys Tyr Ser Ile Trp Leu Leu Leu Ala Pro Thr Pro Pro	
73 78 83 88	
ctc agc cac tgt ctt cag tct cca cag aaa cag cat caa gtg tgc gga	459
Leu Ser His Cys Leu Gln Ser Pro Gln Lys Gln His Gln Val Cys Gly	
89 94 99 104	
gac agg cgg ctg aaa gcc ggc agc acg aac tgc ccg tca gag aag tgc	507
Asp Arg Arg Leu Lys Ala Gly Ser Thr Asn Cys Pro Ser Glu Lys Cys	
105 110 115 120	
aca gcc tgg gcc aga tac tcc cac agg atg gac tca ctg cag aag cag	555
Thr Ala Trp Ala Arg Tyr Ser His Arg Met Asp Ser Leu Gln Lys Gln	
121 126 131 136	
gac ctc cgg agg ccc aag atc cat ggg gca gtc cag gca tct ccc tac	603
Asp Leu Arg Arg Pro Lys Ile His Gly Ala Val Gln Ala Ser Pro Tyr	
137 142 147 152	
cag ccg ccc aca ttg gct tcg ctg cag cgc ttg ctg tgg gtc cgt cag	651
Gln Pro Pro Thr Leu Ala Ser Leu Gln Arg Leu Leu Trp Val Arg Gln	
153 158 163 168	
gct gcc aca ctg aac cat atc gat gag gtc tgg ccc agc ctc ttc ctg	699
Ala Ala Thr Leu Asn His Ile Asp Glu Val Trp Pro Ser Leu Phe Leu	
169 174 179 184	
gga gat gcg tac gca gcc cgg gac aag agc aag ctg atc cag ctg gga	747
Gly Asp Ala Tyr Ala Ala Arg Asp Lys Ser Lys Leu Ile Gln Leu Gly	
185 190 195 200	
atc acc cac gtt gtg aat gcc gct gca ggc aag ttc cag gtg gac aca	795
Ile Thr His Val Val Asn Ala Ala Ala Gly Lys Phe Gln Val Asp Thr	
201 206 211 216	
ggt gcc aaa ttc tac cgt gga atg tcc ctg gag tac tat ggc atc gag	843
Gly Ala Lys Phe Tyr Arg Gly Met Ser Leu Glu Tyr Tyr Gly Ile Glu	
217 222 227 232	
gcg gat gac aac ccc ttc ttc gac ctc agt gtc tac ttt ctg cct gtt	891
Ala Asp Asp Asn Pro Phe Phe Asp Leu Ser Val Tyr Phe Leu Pro Val	
233 238 243 248	

gct cga tac atc cga gct gcc ctc agt gtt ccc caa ggc cgc gtg ctg	939
Ala Arg Tyr Ile Arg Ala Ala Leu Ser Val Pro Gln Gly Arg Val Leu	
249 254 259 264	
gta cac tgt gcc atg ggg gta agc cgc tct gcc aca ctt gtc ctg gcc	987
Val His Cys Ala Met Gly Val Ser Arg Ser Ala Thr Leu Val Leu Ala	
265 270 275 280	
ttc ctc atg atc tgt gag aac atg acg ctg gta gag gcc atc cag acg	1035
Phe Leu Met Ile Cys Glu Asn Met Thr Leu Val Glu Ala Ile Gln Thr	
281 286 291 296	
gtg cag gcc cac cgc aat atc tgc cct aac tca ggc ttc ctc cgg cag	1083
Val Gln Ala His Arg Asn Ile Cys Pro Asn Ser Gly Phe Leu Arg Gln	
297 302 307 312	
ctc cag gtt ctg gac aac cga ctg ggg cgg gag acg ggg cgg ttc tga	1131
Leu Gln Val Leu Asp Asn Arg Leu Gly Arg Glu Thr Gly Arg Phe *	
313 318 323 328	
tctggcaggc agccaggatc cctgaccctt ggcccaaccc caccagcctg gccctgggaa	1191
cagcaggctc tgctgtttct agtgaccctg agatgtaaac agcaagtggg ggctgaggca	1251
gaggcagggg tagctgggtg gtgacctctt agcgggtgga tttccctgac ccaattcaga	1311
gattctttat gcaaaagtga gttcagtcca tctctataat aaaatattca tcgtcataaa	1371
aaaaaaaaa	1380
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ccgctctgcc acgctggtcc tggcctacct catgctgcac cagcggctgt ccctgcgcca	120
ggcgggtgatc accgtgaggc agcaccg atg ggt ctt ccc caa ccg agg ctt	171
Met Gly Leu Pro Gln Pro Arg Leu	
1 5	
cct gca cca gct ctg cag gct gga cca gca act gcg ggg tgc cgg cca	219
Pro Ala Pro Ala Leu Gln Ala Gly Pro Ala Thr Ala Gly Cys Arg Pro	
9 14 19 24	
gag ctg agg ggc cag agc tgg tcc tta ctc cct gcc atg ggg ctc tgc	267
Glu Leu Arg Gly Gln Ser Trp Ser Leu Leu Pro Ala Met Gly Leu Cys	

25	30	35	40	
cac ttt gcc acc ctg gca ctg atc ctg ctg gtg ctg ctg gag gct ctg				315
His Phe Ala Thr Leu Ala Leu Ile Leu Leu Val Leu Leu Glu Ala Leu				
41	46	51	56	
gcc cag gcg gac aca cag aag atg gtg gaa gcc cag cgt ggg gtc ggc				363
Ala Gln Ala Asp Thr Gln Lys Met Val Glu Ala Gln Arg Gly Val Gly				
57	62	67	72	
cct aga gcc tgc tac tcc atc tgg ctc ctc ctg gcg cct aca ccc cct				411
Pro Arg Ala Cys Tyr Ser Ile Trp Leu Leu Leu Ala Pro Thr Pro Pro				
73	78	83	88	
ctc agc cac tgt ctt cag tct cca cag aaa cag cat caa gtg tgc gga				459
Leu Ser His Cys Leu Gln Ser Pro Gln Lys Gln His Gln Val Cys Gly				
89	94	99	104	
gac agg cgg ctg aaa gcc ggc agc acg aac tgc ccg tca gag aag tgc				507
Asp Arg Arg Leu Lys Ala Gly Ser Thr Asn Cys Pro Ser Glu Lys Cys				
105	110	115	120	
aca gcc tgg gcc aga tac tcc cac agg atg gac tca ctg cag aag cag				555
Thr Ala Trp Ala Arg Tyr Ser His Arg Met Asp Ser Leu Gln Lys Gln				
121	126	131	136	
gac ctc cgg agg ccc aag atc cat ggg gca gtc cag gca tct ccc tac				603
Asp Leu Arg Arg Pro Lys Ile His Gly Ala Val Gln Ala Ser Pro Tyr				
137	142	147	152	
cag ccg ccc aca ttg gct tgc ctg cag cgc ttg ctg tgg gtc cgt cag				651
Gln Pro Pro Thr Leu Ala Ser Leu Gln Arg Leu Leu Trp Val Arg Gln				
153	158	163	168	
gct gcc aca ctg aac cat atc gat gag gtc tgg ccc agc ctc ttc ctg				699
Ala Ala Thr Leu Asn His Ile Asp Glu Val Trp Pro Ser Leu Phe Leu				
169	174	179	184	
gga gat gcg tac gca gcc cgg gac aag agc aag ctg atc cag ctg gga				747
Gly Asp Ala Tyr Ala Ala Arg Asp Lys Ser Lys Leu Ile Gln Leu Gly				
185	190	195	200	
atc acc cac gtt gtg aat gcc gct gca ggc cgc gtg ctg gta cac tgt				795
Ile Thr His Val Val Asn Ala Ala Ala Gly Arg Val Leu Val His Cys				
201	206	211	216	
gcc atg ggg gta agc cgc tct gcc aca ctt gtc ctg gcc ttc ctc atg				843
Ala Met Gly Val Ser Arg Ser Ala Thr Leu Val Leu Ala Phe Leu Met				
217	222	227	232	
atc tgt gag aac atg acg ctg gta gag gcc atc cag acg gtg cag gcc				891
Ile Cys Glu Asn Met Thr Leu Val Glu Ala Ile Gln Thr Val Gln Ala				
233	238	243	248	
cac cgc aat atc tgc cct aac tca ggc ttc ctc cgg cag ctc cag gtt				939
His Arg Asn Ile Cys Pro Asn Ser Gly Phe Leu Arg Gln Leu Gln Val				
249	254	259	264	

ctg gac aac cga ctg ggg cgg gag acg ggg cgg ttc tga tctggcaggc 988
 Leu Asp Asn Arg Leu Gly Arg Glu Thr Gly Arg Phe *
 265 270 275

agccaggatc cctgaccctt ggcccaaccc caccagcctg gccctgggaa cagcaggctc 1048

tgctgtttct agtgaccctg agatgtaaac agcaagtggg ggctgaggca gaggcagggg 1108

tagctgggtg gtgacctctt agcgggtgga tttccctgac ccaattcaga gattctttat 1168

gcaaaagtga gttcagtcca tctctataat aaaatattca tcgtcataaa aaaaaaaaaa 1227

<210> 1028

<211> 1457

<212> DNA

<213> Homo sapiens

<220>

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<222> (227)..(499)

<400> 1028

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aaatattaat tttagaacc tatactttta ttgaaatgta tcttggtttt aggtttatgt 120

ctcattggat caacctgtga ctgctttaaa tcttttcaaa caaggcttag ataagtttcc 180

aggagaagta accctgctct gtggaattgc aagaatctat gaggaa atg aac aat 235
 Met Asn Asn
 1

atg tca tca gca gca gaa tat tac aaa gaa gtt ttg aaa caa gac aat 283
 Met Ser Ser Ala Ala Glu Tyr Tyr Lys Glu Val Leu Lys Gln Asp Asn
 4 9 14 19

act cat gtg gaa gcc atc gca tgc att gga agc aac cac ttc tat tct 331
 Thr His Val Glu Ala Ile Ala Cys Ile Gly Ser Asn His Phe Tyr Ser
 20 25 30 35

gat cag cca gat ata gct cta cgg ttt tac agg cgg ctg ctg cat atg 379
 Asp Gln Pro Asp Ile Ala Leu Arg Phe Tyr Arg Arg Leu Leu His Met
 36 41 46 51

ggc att tat aac ggc cag ctt ttt aac aat ctg ggg ctg tgt tgc ttc 427
 Gly Ile Tyr Asn Gly Gln Leu Phe Asn Asn Leu Gly Leu Cys Cys Phe
 52 57 62 67

tat gcc cag cag tat gat atg act ctg acc tca ttt gaa cgt gcc ctt 475
 Tyr Ala Gln Gln Tyr Asp Met Thr Leu Thr Ser Phe Glu Arg Ala Leu
 68 73 /78 83

tct ttg gct gaa aat gat gaa tag gcagctgatg tctggtacta cttgggacat 529

Ser Leu Ala Glu Asn Asp Glu *

84

89

gtagctgtgg gaataggaga tacaaatttg gcccatcagt gcttcaggct ggctctggtc 589
aacaacaaca accacgccga ggccataaac aacctggctg tgctggagat gcggaagggc 649
cacgttgaac aggcaagggc actattacaa actgcatcat cattagcacc ccatatgtat 709
gaaccgcatt ttaattttgc aacaatctct gataagattg gagatctgca gagaagctat 769
gttgctgcgc agaagtctga agcagcattt ccagaccatg tggacacaca acatttaatt 829
aaacaattaa ggcagcattt tgctatgctc tgattgttcc tttagaccaca tatgttctta 889
tgaagcagca ttatgcaagg ggaaaaaagc actatgtctg tgtatgtatg tatatagtgt 949
aatacgtata ttttaacaaa cctgtccttg atattagtta aggtgacaca taaggggtgac 1009
acagaatgtg taatgcaaatt ttcatagtaa tagtaacttt ataaaataat attataaaat 1069
acaggattta aacctttcta aatagatcct gaaactgtct ctcacattat atagtagatg 1129
tttgtttata atgtttacaa aacatttttg tgaatttcct caatgtttta taaatgtaca 1189
ttttttaagt ccttaagctg actcttagcc atcatgtagc ttaaggagtc tgaaatctgc 1249
cattaaaact gcacctttaa gccagggtgtg gtagcatgtg cctatagtcc cagctacttg 1309
ggagggtggag gtgggaggat tataaataga gactttcctt aagactttta aaatgtattt 1369
aaaactattt tttattaaat actttgtgat ttcctattaa gctttaaaat aaatcattgt 1429
gtaaaacacc atcaaaaaaa aaaaaaaa 1457

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<211> 2375

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (63)..(1388)

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tg atg gct gtc gtc ccg gcg tct ctc tca gga cag gac gtg gga tca 107
Met Ala Val Val Pro Ala Ser Leu Ser Gly Gln Asp Val Gly Ser
1 10
ttt gca tat ctt aca att aaa gac aga ata cca cag atc tta act aag 155
Phe Ala Tyr Leu Thr Ile Lys Asp Arg Ile Pro Gln Ile Leu Thr Lys
16 21 26 31

gtt att gat aca ttg cat cga cat aaa agt gaa ttt ttt gag aaa cac	203
Val Ile Asp Thr Leu His Arg His Lys Ser Glu Phe Phe Glu Lys His	
32 37 42 47	
gga gag gaa ggc gtg gaa gct gaa aag aaa gct atc tct ctc ctt tct	251
Gly Glu Glu Gly Val Glu Ala Glu Lys Lys Ala Ile Ser Leu Leu Ser	
48 53 58 63	
aaa tta cgg aat gaa ttg caa aca gat aaa cca ttt atc ccc ttg gtt	299
Lys Leu Arg Asn Glu Leu Gln Thr Asp Lys Pro Phe Ile Pro Leu Val	
64 69 74 79	
gag aaa ttt gtt gat act gat ata tgg aat cag tac cta gaa tat caa	347
Glu Lys Phe Val Asp Thr Asp Ile Trp Asn Gln Tyr Leu Glu Tyr Gln	
80 85 90 95	
cag agt ctt tta aat gaa agt gat gga aaa tca aga tgg ttc tac tca	395
Gln Ser Leu Leu Asn Glu Ser Asp Gly Lys Ser Arg Trp Phe Tyr Ser	
96 101 106 111	
ccg tgg ttg ttg gta gaa tgt tac atg tat cga aga att cat gaa gca	443
Pro Trp Leu Leu Val Glu Cys Tyr Met Tyr Arg Arg Ile His Glu Ala	
112 117 122 127	
att atc cag agt cca cca atc gat tac ttt gat gta ttt aaa gaa tca	491
Ile Ile Gln Ser Pro Pro Ile Asp Tyr Phe Asp Val Phe Lys Glu Ser	
128 133 138 143	
aaa gag caa aat ttc tat ggg tca cag gaa tcc atc att gct tta tgt	539
Lys Glu Gln Asn Phe Tyr Gly Ser Gln Glu Ser Ile Ile Ala Leu Cys	
144 149 154 159	
act cac ctg caa caa ttg ata aga act att gaa gac cta gat gaa aat	587
Thr His Leu Gln Gln Leu Ile Arg Thr Ile Glu Asp Leu Asp Glu Asn	
160 165 170 175	
cag ctg aaa gat gag ttt ttt aaa ctt ctg cag att tca ctg tgg gga	635
Gln Leu Lys Asp Glu Phe Phe Lys Leu Leu Gln Ile Ser Leu Trp Gly	
176 181 186 191	
aat aag tgt gat ctg tct ctc tca ggt gga gaa agt agt tct cag aat	683
Asn Lys Cys Asp Leu Ser Leu Ser Gly Gly Glu Ser Ser Ser Gln Asn	
192 197 202 207	
acc aat gta cta aat tca ttg gaa gac cta aaa cct ttc att tta ttg	731
Thr Asn Val Leu Asn Ser Leu Glu Asp Leu Lys Pro Phe Ile Leu Leu	
208 213 218 223	
aat gat atg gaa cat ctt tgg tca ttg ctt agc aat tgc aag aaa aca	779
Asn Asp Met Glu His Leu Trp Ser Leu Leu Ser Asn Cys Lys Lys Thr	
224 229 234 239	
aga gaa aaa gct tct gct act aga gtg tat att gtt ctc gat aat tct	827
Arg Glu Lys Ala Ser Ala Thr Arg Val Tyr Ile Val Leu Asp Asn Ser	
240 245 250 255	

gga ttt gag ctt gtt aca gat tta ata tta gcc gac ttc ttg ttg tcc	875
Gly Phe Glu Leu Val Thr Asp Leu Ile Leu Ala Asp Phe Leu Leu Ser	
256 261 266 271	
tct gaa ctg gct act gag gtt cat ttt tat gga aaa aca att cca tgg	923
Ser Glu Leu Ala Thr Glu Val His Phe Tyr Gly Lys Thr Ile Pro Trp	
272 277 282 287	
ttt gtt tct gat act act ata cat gat ttt aat tgg tta att gaa cag	971
Phe Val Ser Asp Thr Thr Ile His Asp Phe Asn Trp Leu Ile Glu Gln	
288 293 298 303	
gta aaa cac agt aat cat aag tgg atg tcc aag tgt ggg gct gac tgg	1019
Val Lys His Ser Asn His Lys Trp Met Ser Lys Cys Gly Ala Asp Trp	
304 309 314 319	
gaa gag tat att aaa atg ggt aaa tgg gtt tac cac aat cat ata ttt	1067
Glu Glu Tyr Ile Lys Met Gly Lys Trp Val Tyr His Asn His Ile Phe	
320 325 330 335	
tgg act ctg cct cat gag tac tgt gca atg cct cag gtt gca cct gac	1115
Trp Thr Leu Pro His Glu Tyr Cys Ala Met Pro Gln Val Ala Pro Asp	
336 341 346 351	
tta tat gct gaa cta cag aag gca cat tta att tta ttc aag ggt gat	1163
Leu Tyr Ala Glu Leu Gln Lys Ala His Leu Ile Leu Phe Lys Gly Asp	
352 357 362 367	
ttg aat tac agg aag ttg aca ggt gac aga aaa tgg gag ttt tct gtt	1211
Leu Asn Tyr Arg Lys Leu Thr Gly Asp Arg Lys Trp Glu Phe Ser Val	
368 373 378 383	
cca ttt cat cag gct ctg aat ggc ttc cat cct gca cca ctc tgt acc	1259
Pro Phe His Gln Ala Leu Asn Gly Phe His Pro Ala Pro Leu Cys Thr	
384 389 394 399	
ata aga aca tta aaa gct gaa att cag gtt ggt ctg cag cct ggg caa	1307
Ile Arg Thr Leu Lys Ala Glu Ile Gln Val Gly Leu Gln Pro Gly Gln	
400 405 410 415	
ggg gaa cag ctc ctg gcc tct gag ccc agc tgg tgg acc act gga aaa	1355
Gly Glu Gln Leu Leu Ala Ser Glu Pro Ser Trp Trp Thr Thr Gly Lys	
416 421 426 431	
tat gga ata ttt cag tac gat ggt ccc ctt tga cttgattt aggagctctc	1406
Tyr Gly Ile Phe Gln Tyr Asp Gly Pro Leu *	
432 437 442	
agttgcatag aaagatctgg tgagcacctt ttcacccca gaaaaggagc acgtgaattg	1466
agtcgcctgg cggctctgta cgcgctcagg gaagcttagc ttcttggtgc ccatctacgt	1526
gcactggatg atttttcttt tgaacatttt gccccactac actgttttgg ggatagctgg	1586
gttaagcaag ttaaagatat ttacatttat attggaattt tagcaacttt ttttcaggtt	1646
aaatatataa tttcaagtgc ttttaatgaa cttattttta attggctagg gagcaaaaaa	1706

taagtgagtt ctgcttttag ttagttaacc ttgttctttt cttaaatagt acactgcatg	1766
gtatttaata ttccaggaag catgggattt tattttgctt gattttgggc acatgaaata	1826
atagctctag gaaaatgcgc atcttaatga ctctttgtaa agagaggcat ttcttacaac	1886
tgtgatgttt gcttacataa aagttacctc ataagttaat tctaactttt attcttgaat	1946
tttatttcat ttcaatagct tgtttcattt gcacgccttt gtattttgat tgacctgtag	2006
aatggatgtt aggaaactca aaattgaaca cagtgaaca aatggatttt gaagaaatgt	2066
aatatctttt atattctatt tatgatatcc ataatcaaat gagattattt taccacataa	2126
atgttttaaa tatcagattt ttagtttgca gttttaggaa aatgcttttag atagaaaagg	2186
ttcttatgca ttgaatttgg agtactacca acaatgaatg aattttattt ttatattctt	2246
acacatttta ttggtcattg tcacagatag taaatactaa aaatttcagg tcagtttggt	2306
ttgaaactga aattggaaat aaatctggaa atgttttggt gcactaaaat aataaaatga	2366
attgtactg	2375

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 <211> 455
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 <222> (96)..(236)

<220>
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cttgatcggg aactcctgct tctccttgcc tcgaa	
atg gac ccc aac tgc tcc	113
Met Asp Pro Asn Cys Ser	
1	
tgc tgc cct gtt ggc tcc tgt gcc tgt gcc ggc tcc tgc aaa tgc aaa	161
Cys Ser Pro Val Gly Ser Cys Ala Cys Ala Gly Ser Cys Lys Cys Lys	
7 12 17 22	
gag tgc aaa tgc acc tcc tgc aag aag agt gag tgc agg gcc ttc cct	209
Glu Cys Lys Cys Thr Ser Cys Lys Lys Ser Glu Cys Arg Ala Phe Pro	
23 28 33 38	

gcg aat ctg ggg gat ggg cca agt tag agcag ggaacccaga gctctgcagg 261
 Ala Asn Leu Gly Asp Gly Pro Ser *
 39 44

caggggcagg ccaatgacca gcttccccaa acccctcctt caacacctga ttcagaatca 321

gacctcaaat tgccttaaaa atgggctgct gctcctgctg ccctgtgggc tgtgccaagt 381

gtgccagggt ctgcattctgc aaagggacgt cagacaagtg cagctgctgt gcctgatgcc 441

aagacagctg tgct 455

<210> 1031
 <211> 922
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (26)..(520)

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 Met Thr Ala Ser Ala Gln Pro Arg Gly
 1 5

cgg cgg cca gga gtc gga gtc gga gtc gtg gtg acc agc tgc aag cat 100
 Arg Arg Pro Gly Val Gly Val Gly Val Val Val Thr Ser Cys Lys His
 10 15 20 25

ccg cgt tgc gtc ctc ctg ggg aag agg aaa ggc tcg gtt gga gct ggc 148
 Pro Arg Cys Val Leu Leu Gly Lys Arg Lys Gly Ser Val Gly Ala Gly
 26 31 36 41

agt ttc caa ctc cct gga ggt cat ctg gag ttc ggt gaa acc tgg gaa 196
 Ser Phe Gln Leu Pro Gly Gly His Leu Glu Phe Gly Glu Thr Trp Glu
 42 47 52 57

gaa tgt gct caa agg gaa acc tgg gaa gaa gca gct ctt cac ctg aaa 244
 Glu Cys Ala Gln Arg Glu Thr Trp Glu Glu Ala Ala Leu His Leu Lys
 58 63 68 73

aat gtt cac ttt gcc tca gtt gtg aat tct ttc att gag aag gag aat 292
 Asn Val His Phe Ala Ser Val Val Asn Ser Phe Ile Glu Lys Glu Asn
 74 79 84 89

tac cat tat gtt act ata tta atg aaa gga gaa gtg gat gtg act cat 340
 Tyr His Tyr Val Thr Ile Leu Met Lys Gly Glu Val Asp Val Thr His
 90 95 100 105

gat tca gaa cca aag aat gta gag cct gaa aaa aat gaa agt tgg gag 388
 Asp Ser Glu Pro Lys Asn Val Glu Pro Glu Lys Asn Glu Ser Trp Glu
 106 111 116 121

tgg gtt cct tgg gaa gaa cta cct ccc ctg gac cag ctt ttc tgg gga	436
Trp Val Pro Trp Glu Glu Leu Pro Pro Leu Asp Gln Leu Phe Trp Gly	
122 127 132 137	

ctg cgt tgt tta aaa gaa caa ggc tat gat cca ttt aaa gaa gat ctg	484
Leu Arg Cys Leu Lys Glu Gln Gly Tyr Asp Pro Phe Lys Glu Asp Leu	
138 143 148 153	

aac cat ctg gtg gga tac aaa gga aat cat ctc tag gtgg ccgagaagat	534
Asn His Leu Val Gly Tyr Lys Gly Asn His Leu *	
154 159 164	

ttgattttct ttaaaaagac aagaataagg tctggttagg gaatgaaaaa tgtatacatt	594
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tcggaacaac tccattttat ctaaaaaagt tcttgtgatt gccagtttat ttgcagtctc	654
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ttaatgtatc cccactctt tcagccagta cttgagaaaa tttttctgaa atatgtcatt	714
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gaattgtatt ccagacacag aatacatgat aaatactgat attatgggta atctgctttc	774
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catatttacc tatgatattt actgtgcagt ttgtcattac tagcttgcac ggagtaggat	834
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gcagtcaaat ttgccttagt gtttctgttc aaatagagac ctgaattcaa atattgtagt	894
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ttaggttcaa acagagtatg gctgggtgg	922
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<210> 1032

<211> 1501

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (161) .. (1468)

<400> 1032

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ttacgcctac ggtaatgtgg gccctgatgc cctcattgaa	175
atg gac cct gag gcc	
Met Asp Pro Glu Ala	
1	

agt gac ctc tcc cgg ggc att ctg gcg ctc aga gat gtg gct gct gag	223
Ser Asp Leu Ser Arg Gly Ile Leu Ala Leu Arg Asp Val Ala Ala Glu	
6 11 16 21	

gct ggg gtc agc aaa tat aca ggg ggc cga ggc gtc agc gtg ggc ccc	271
Ala Gly Val Ser Lys Tyr Thr Gly Gly Arg Gly Val Ser Val Gly Pro	
22 27 32 37	

atc ctc agc agc agt gcc tcg gat atc ttc tgc gac aat gag aat ggg	319
Ile Leu Ser Ser Ser Ala Ser Asp Ile Phe Cys Asp Asn Glu Asn Gly	

38					43					48					53					
cct	aac	ttc	ctt	ttc	cac	aac	cgg	ggc	gat	ggc	acc	ttt	gtg	gac	gct	367				
Pro	Asn	Phe	Leu	Phe	His	Asn	Arg	Gly	Asp	Gly	Thr	Phe	Val	Asp	Ala					
54					59					64					69					
gcg	gcc	agt	gct	ggc	gtg	gac	gac	ccc	cac	cag	cat	ggg	cga	ggc	gtc	415				
Ala	Ala	Ser	Ala	Gly	Val	Asp	Asp	Pro	His	Gln	His	Gly	Arg	Gly	Val					
70					75					80					85					
gcc	ctg	gct	gac	ttc	aac	cgt	gat	ggc	aaa	gtg	gac	atc	gtc	tat	ggc	463				
Ala	Leu	Ala	Asp	Phe	Asn	Arg	Asp	Gly	Lys	Val	Asp	Ile	Val	Tyr	Gly					
86					91					96					101					
aac	tgg	aat	ggc	ccc	cac	cgc	ctc	tat	ctg	caa	atg	agc	acc	cat	ggg	511				
Asn	Trp	Asn	Gly	Pro	His	Arg	Leu	Tyr	Leu	Gln	Met	Ser	Thr	His	Gly					
102					107					112					117					
aag	gtc	cgc	ttc	cgg	gac	atc	gcc	tca	ccc	aag	ttc	tcc	atg	ccc	tcc	559				
Lys	Val	Arg	Phe	Arg	Asp	Ile	Ala	Ser	Pro	Lys	Phe	Ser	Met	Pro	Ser					
118					123					128					133					
cct	gtc	cgc	acg	gtc	atc	acc	gcc	gac	ttt	gac	aat	gac	cag	gag	ctg	607				
Pro	Val	Arg	Thr	Val	Ile	Thr	Ala	Asp	Phe	Asp	Asn	Asp	Gln	Glu	Leu					
134					139					144					149					
gag	atc	ttc	ttc	aac	aac	att	gcc	tac	cgc	agc	tcc	tca	gcc	aac	cgc	655				
Glu	Ile	Phe	Phe	Asn	Asn	Ile	Ala	Tyr	Arg	Ser	Ser	Ser	Ala	Asn	Arg					
150					155					160					165					
ctc	ttc	cgc	gtc	atc	cgt	aga	gag	cac	gga	gac	ccc	ctc	atc	gag	gag	703				
Leu	Phe	Arg	Val	Ile	Arg	Arg	Glu	His	Gly	Asp	Pro	Leu	Ile	Glu	Glu					
166					171					176					181					
ctc	aat	ccc	ggc	gac	gcc	ttg	gag	cct	gag	ggc	cgg	ggc	aca	ggg	ggc	751				
Leu	Asn	Pro	Gly	Asp	Ala	Leu	Glu	Pro	Glu	Gly	Arg	Gly	Thr	Gly	Gly					
182					187					192					197					
gtg	gtg	acc	gac	ttc	gac	gga	gac	ggg	atg	ctg	gac	ctc	atc	ttg	tcc	799				
Val	Val	Thr	Asp	Phe	Asp	Gly	Asp	Gly	Met	Leu	Asp	Leu	Ile	Leu	Ser					
198					203					208					213					
cat	gga	gag	tcc	atg	gct	cag	ccg	ctg	tcc	gtc	ttc	cgg	ggc	aat	cag	847				
His	Gly	Glu	Ser	Met	Ala	Gln	Pro	Leu	Ser	Val	Phe	Arg	Gly	Asn	Gln					
214					219					224					229					
ggc	ttc	aac	aac	aac	tgg	ctg	cga	gtg	gtg	cca	cgc	acc	cgg	ttt	ggg	895				
Gly	Phe	Asn	Asn	Asn	Trp	Leu	Arg	Val	Val	Pro	Arg	Thr	Arg	Phe	Gly					
230					235					240					245					
gcc	ttt	gcc	agg	gga	gct	aag	gtc	gtg	ctc	tac	acc	aag	aag	agt	ggg	943				
Ala	Phe	Ala	Arg	Gly	Ala	Lys	Val	Val	Leu	Tyr	Thr	Lys	Lys	Ser	Gly					

gag ccc gtg gca cac ttt ggc ctg ggg aag gat gaa gcc agc agt gtg	1039
Glu Pro Val Ala His Phe Gly Leu Gly Lys Asp Glu Ala Ser Ser Val	
278 283 288 293	
gag gtg acg tgg cca gat ggc aag atg gtg agc cgg aac gtg gcc agc	1087
Glu Val Thr Trp Pro Asp Gly Lys Met Val Ser Arg Asn Val Ala Ser	
294 299 304 309	
ggg gag atg aac tca gtg ctg gag atc ctc tac ccc cgg gat gag gac	1135
Gly Glu Met Asn Ser Val Leu Glu Ile Leu Tyr Pro Arg Asp Glu Asp	
310 315 320 325	
aca ctt cag gac cca gcc cca ctg gag tgt ggc caa gga ttc tcc cag	1183
Thr Leu Gln Asp Pro Ala Pro Leu Glu Cys Gly Gln Gly Phe Ser Gln	
326 331 336 341	
cag gaa aat ggc cat tgc atg gac acc aat gaa tgc atc cag ttc cca	1231
Gln Glu Asn Gly His Cys Met Asp Thr Asn Glu Cys Ile Gln Phe Pro	
342 347 352 357	
ttc gtg tgc cct cga gac aag ccc gta tgt gtc aac acc tat gga agc	1279
Phe Val Cys Pro Arg Asp Lys Pro Val Cys Val Asn Thr Tyr Gly Ser	
358 363 368 373	
tac agg tgc cgg acc aac aag aag tgc agt cgg ggc tac gag ccc aac	1327
Tyr Arg Cys Arg Thr Asn Lys Lys Cys Ser Arg Gly Tyr Glu Pro Asn	
374 379 384 389	
gag gat ggc aca gcc tgc gtg gct caa gtg gcc ttt tta ggt ggg tat	1375
Glu Asp Gly Thr Ala Cys Val Ala Gln Val Ala Phe Leu Gly Gly Tyr	
390 395 400 405	
tct tca gcc gcc tct aga atc tct gag cct ctc tct cgg gcc tca tat	1423
Ser Ser Ala Ala Ser Arg Ile Ser Glu Pro Leu Ser Arg Ala Ser Tyr	
406 411 416 421	
ctt tct cta ggc ctt gga ctt tgc ctt cag tta tat gca ctt taa atc	1471
Leu Ser Leu Gly Leu Gly Leu Cys Leu Gln Leu Tyr Ala Leu *	
422 427 432	
ccatcaataa aggaaaaaac aaaccaaaaa	1501

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gccctctccg agtccggggc tgggtcccac cagtgacaag gcggcagccc cgcgcacacc	120
aaagagaagg cggctgtggc ggcagcggca gcccagcc atg ctg tgt tat gtg Met Leu Cys Tyr Val 1	174
acg agg ccg gac gcg gtg ctg atg gag gtg gag gtg gag gcg aaa gcc Thr Arg Pro Asp Ala Val Leu Met Glu Val Glu Val Glu Ala Lys Ala 6 11 16 21	222
aac ggc gag gac tgc ctc aac cag gtg tgc agg cga ctg gga atc ata Asn Gly Glu Asp Cys Leu Asn Gln Val Cys Arg Arg Leu Gly Ile Ile 22 27 32 37	270
gaa gtt gac tat ttt gga ctg cag ttt acg ggt agc aaa ggt gaa agt Glu Val Asp Tyr Phe Gly Leu Gln Phe Thr Gly Ser Lys Gly Glu Ser 38 43 48 53	318
tta tgg cta aac ctg aga aac cgg atc tcc cag cag atg gat ggg cta Leu Trp Leu Asn Leu Arg Asn Arg Ile Ser Gln Gln Met Asp Gly Leu 54 59 64 69	366
gcc cct tac agg ctt aaa ctt aga gtc aag ttc ttc gtg gag cct cat Ala Pro Tyr Arg Leu Lys Leu Arg Val Lys Phe Phe Val Glu Pro His 70 75 80 85	414
ctc atc tta cag gag cag act agg cat atc ttt ttc ttg cac atc aag Leu Ile Leu Gln Glu Gln Thr Arg His Ile Phe Phe Leu His Ile Lys 86 91 96 101	462
gag gcc ctc ttg gca ggc cac ctc ttg tgt tcc cca gag cag gca gtg Glu Ala Leu Leu Ala Gly His Leu Leu Cys Ser Pro Glu Gln Ala Val 102 107 112 117	510
gaa ctc agt gcc ctc ctg gcc cag acc aag ttt gga gac tac aac cag Glu Leu Ser Ala Leu Leu Ala Gln Thr Lys Phe Gly Asp Tyr Asn Gln 118 123 128 133	558
aac act gcc aag tat aac tat gag gag ctc tgt gcc aag gag ctc tcc Asn Thr Ala Lys Tyr Asn Tyr Glu Glu Leu Cys Ala Lys Glu Leu Ser 134 139 144 149	606
tct gcc acc ttg aac agc att gtt gca aaa cat aag gag ttg gag ggg Ser Ala Thr Leu Asn Ser Ile Val Ala Lys His Lys Glu Leu Glu Gly 150 155 160 165	654
acc agc cag gct tca gct gaa tac caa gtt ttg cag att gtg tcg gca Thr Ser Gln Ala Ser Ala Glu Tyr Gln Val Leu Gln Ile Val Ser Ala 166 171 176 181	702
atg gaa aac tat ggc ata gaa tgg cat tct gtg cgg gat agc gaa ggg Met Glu Asn Tyr Gly Ile Glu Trp His Ser Val Arg Asp Ser Glu Gly 182 187 192 197	750
cag aaa ctg ctc att ggg gtt gga cct gaa gga atc tca att tgt aaa Gln Lys Leu Leu Ile Gly Val Gly Pro Glu Gly Ile Ser Ile Cys Lys	798

198	203	208	213	
gat gac ttt agc cca att aat agg ata gct tat cct gtg gtg cag atg Asp Asp Phe Ser Pro Ile Asn Arg Ile Ala Tyr Pro Val Val Gln Met 214 219 224 229				846
gcc acc cag tca gga aag aat gta tat ttg acg gtc acc aag gaa tct Ala Thr Gln Ser Gly Lys Asn Val Tyr Leu Thr Val Thr Lys Glu Ser 230 235 240 245				894
ggg aac agc atc gtg ctt ttg ttt aaa atg atc agc acc agg gcg gcc Gly Asn Ser Ile Val Leu Leu Phe Lys Met Ile Ser Thr Arg Ala Ala 246 251 256 261				942
agc ggg ctc tac cga gcg ata aca gag acg cac gca ttc tac agg tgt Ser Gly Leu Tyr Arg Ala Ile Thr Glu Thr His Ala Phe Tyr Arg Cys 262 267 272 277				990
gac aca gtg acc agc gcc gtg atg atg cag tat agc cgt gac ttg aag Asp Thr Val Thr Ser Ala Val Met Met Gln Tyr Ser Arg Asp Leu Lys 278 283 288 293				1038
ggc cac ttg gca tct ctg ttt ctg aat gaa aac att aac ctt ggc aag Gly His Leu Ala Ser Leu Phe Leu Asn Glu Asn Ile Asn Leu Gly Lys 294 299 304 309				1086
aaa tat gtc ttt gat att aaa aga aca tca aag gag gtg tat gac cat Lys Tyr Val Phe Asp Ile Lys Arg Thr Ser Lys Glu Val Tyr Asp His 310 315 320 325				1134
gcc agg agg gct ctg tac aat gct ggc gtt gtg gac ctc gtt tca aga Ala Arg Arg Ala Leu Tyr Asn Ala Gly Val Asp Leu Val Ser Arg 326 331 336 341				1182
aac aac cag agc cct tca cac tcg cct ctg aag tcc tca gaa agc agc Asn Asn Gln Ser Pro Ser His Ser Pro Leu Lys Ser Ser Glu Ser Ser 342 347 352 357				1230
atg aac tgc agc agc tgc gag ggc ctc agc tgc cag cag acc cgg gtg Met Asn Cys Ser Ser Cys Glu Gly Leu Ser Cys Gln Gln Thr Arg Val 358 363 368 373				1278
ctg cag gag aag cta cgc aag ctg aag gaa gcc atg ctg tgc atg gtg Leu Gln Glu Lys Leu Arg Lys Leu Lys Glu Ala Met Leu Cys Met Val 374 379 384 389				1326
tgc tgc gag gag gag atc aac tcc acc ttc tgt ccc tgt ggc cac act Cys Cys Glu Glu Glu Ile Asn Ser Thr Phe Cys Pro Cys Gly His Thr 390 395 400 405				1374
gtg tgc tgt gag agc tgc gcc gcc cag cta cag tca tgt ccc gtc tgc Val Cys Cys Glu Ser Cys Ala Ala Gln Leu Gln Ser Cys Pro Val Cys 406 411 416 421				1422
agg tcg cgt gtg gag cat gtc cag cac gtc tat ctg cca acg cac acc Arg Ser Arg Val Glu His Val Gln His Val Tyr Leu Pro Thr His Thr 422 427 432 437				1470

agt ctt ctc aat ctg act gta atc taa tctgt tgtgcttttg ttggacttgg 1522
 Ser Leu Leu Asn Leu Thr Val Ile *
 438 443

catgtttcca tgaactgcac tattataaac tattaaaaatg atagattgtg gagaaagtaa 1582

ttattccaac acccatctgc catgcatgtg taaaaaaaaa aaaa 1626

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 <212> DNA
 <213> Homo sapiens

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gcggcctcgg ctggcggcgg caccaggcca cagttgtaag ggatcttgtg gctgtcagg 119
 atg gca gag gag cag gag ttc acc cag ctc tgc aag ttg cct gca cag 167
 Met Ala Glu Glu Gln Glu Phe Thr Gln Leu Cys Lys Leu Pro Ala Gln
 1 5 10 15

ccc tca cac cca cac tgc gtg aac aac acc tac cgc agc gca cag cac 215
 Pro Ser His Pro His Cys Val Asn Asn Thr Tyr Arg Ser Ala Gln His
 17 22 27 32

tcc cag gct ctg ctc cga ggg ctg ctg gct ctc cgg gac agc gga atc 263
 Ser Gln Ala Leu Leu Arg Gly Leu Leu Ala Leu Arg Asp Ser Gly Ile
 33 38 43 48

ctc ttc gat gtt gtg ctg gtg gtg gag ggc aga cac atc gag gcc cat 311
 Leu Phe Asp Val Val Leu Val Val Glu Gly Arg His Ile Glu Ala His
 49 54 59 64

cgc atc ctg ctg gct gcg tcc tgc gat tac ttc aaa gga atg ttt gct 359
 Arg Ile Leu Leu Ala Ala Ser Cys Asp Tyr Phe Lys Gly Met Phe Ala
 65 70 75 80

ggg gga ttg aag gag atg gaa cag gaa gag gtc ctg atc cac ggt gtg 407
 Gly Gly Leu Lys Glu Met Glu Gln Glu Glu Val Leu Ile His Gly Val
 81 86 91 96

tcc tac aat gct atg tgc caa atc cta cat ttc ata tac acc tcc gag 455
 Ser Tyr Asn Ala Met Cys Gln Ile Leu His Phe Ile Tyr Thr Ser Glu
 97 102 107 112

ctg gag ctc agc ctg agc aat gta caa gag aca ctg gtg gct gcc tgc 503
 Leu Glu Leu Ser Leu Ser Asn Val Gln Glu Thr Leu Val Ala Ala Cys
 113 118 123 128

cag ctt cag atc cca gaa att atc cat ttc tgc tgt gat ttc ctc atg	551
Gln Leu Gln Ile Pro Glu Ile Ile His Phe Cys Cys Asp Phe Leu Met	
129 134 139 144	
tcc tgg gtg gac gaa gag aac att ctc gat gtc tac cgg ctg gca gag	599
Ser Trp Val Asp Glu Glu Asn Ile Leu Asp Val Tyr Arg Leu Ala Glu	
145 150 155 160	
ctg ttt gac ttg agc cgc ctg act gag caa ctg gac acc tat atc ctc	647
Leu Phe Asp Leu Ser Arg Leu Thr Glu Gln Leu Asp Thr Tyr Ile Leu	
161 166 171 176	
aaa aac ttt gtg gcc ttc tct cgg act gac aag tac cgc cag ctt cca	695
Lys Asn Phe Val Ala Phe Ser Arg Thr Asp Lys Tyr Arg Gln Leu Pro	
177 182 187 192	
ttg gag aag gtc tac tcc ctc ctc agc agc aat cgc ctg gag gtc tcc	743
Leu Glu Lys Val Tyr Ser Leu Leu Ser Ser Asn Arg Leu Glu Val Ser	
193 198 203 208	
tgc gag acc gag gta tat gag ggg gcc ctt ctc tac cat tat agc ctg	791
Cys Glu Thr Glu Val Tyr Glu Gly Ala Leu Leu Tyr His Tyr Ser Leu	
209 214 219 224	
gag cag gtg cag gct gac cag atc tcg ctg cac gag ccc cca aag ctc	839
Glu Gln Val Gln Ala Asp Gln Ile Ser Leu His Glu Pro Pro Lys Leu	
225 230 235 240	
ctt gag aca gtg cgg ttt ccg ctg atg gaa gct gag gtc ctg cag cgg	887
Leu Glu Thr Val Arg Phe Pro Leu Met Glu Ala Glu Val Leu Gln Arg	
241 246 251 256	
ctg cat gac aag ctg gac ccc agc cct ttg agg gac aca gtg gcc agc	935
Leu His Asp Lys Leu Asp Pro Ser Pro Leu Arg Asp Thr Val Ala Ser	
257 262 267 272	
gcc ctc atg tac cac cgg aac gag agc cta cag ccc agc ctg cag agc	983
Ala Leu Met Tyr His Arg Asn Glu Ser Leu Gln Pro Ser Leu Gln Ser	
273 278 283 288	
ccg caa acg gag ctg cgg tcg gac ttc cag tgc gtt gtg ggc ttc ggg	1031
Pro Gln Thr Glu Leu Arg Ser Asp Phe Gln Cys Val Val Gly Phe Gly	
289 294 299 304	
ggc att cac tcc acg ccg tcc act gtc ctc agc gac cag gcc aag tat	1079
Gly Ile His Ser Thr Pro Ser Thr Val Leu Ser Asp Gln Ala Lys Tyr	
305 310 315 320	
cta aac ccc tta ctg gga gag tgg aag cac ttc act gcc tcc ctg gcc	1127
Leu Asn Pro Leu Leu Gly Glu Trp Lys His Phe Thr Ala Ser Leu Ala	
321 326 331 336	
ccc cgc atg tcc aac cag ggc atc gcg gtg ctc aac aac ttc gta tac	1175
Pro Arg Met Ser Asn Gln Gly Ile Ala Val Leu Asn Asn Phe Val Tyr	
337 342 347 352	/
ttg att gga ggg gac aac aat gtc caa gga ttt cga gca gag tcc cga	1223

Leu Ile Gly Gly Asp Asn Asn Val Gln Gly Phe Arg Ala Glu Ser Arg	
353 358 363 368	
tgc tgg agg tat gac cca cgg cac aac cgc tgg ttc cag atc cag tcc	1271
Cys Trp Arg Tyr Asp Pro Arg His Asn Arg Trp Phe Gln Ile Gln Ser	
369 374 379 384	
ctg cag cag gag cac gcc gac ctg tcc gtg tgt gtt gta ggc agg tac	1319
Leu Gln Gln Glu His Ala Asp Leu Ser Val Cys Val Val Gly Arg Tyr	
385 390 395 400	
atc tac gct gtg gcg ggc cgt gac tac cac aat gac ctg aat gct gtg	1367
Ile Tyr Ala Val Ala Gly Arg Asp Tyr His Asn Asp Leu Asn Ala Val	
401 406 411 416	
gag cgc tac gac cct gcc acc aac tcc tgg gca tac gtg gcc cca ctc	1415
Glu Arg Tyr Asp Pro Ala Thr Asn Ser Trp Ala Tyr Val Ala Pro Leu	
417 422 427 432	
aag agg gag gtg tat gcc cac gca ggc gcg acg ctg gag ggg aag atg	1463
Lys Arg Glu Val Tyr Ala His Ala Gly Ala Thr Leu Glu Gly Lys Met	
433 438 443 448	
tat atc acc tgc ggc cgc aga ggg gag gat tac ctg aaa gag aca cac	1511
Tyr Ile Thr Cys Gly Arg Arg Gly Glu Asp Tyr Leu Lys Glu Thr His	
449 454 459 464	
tgc tac gat cca ggc agc aac act tgg cac aca ctg gct gat ggg cct	1559
Cys Tyr Asp Pro Gly Ser Asn Thr Trp His Thr Leu Ala Asp Gly Pro	
465 470 475 480	
gtg cgg cgc gcc tgg cac ggc atg gca acc ctc ctc aac aag ctg tat	1607
Val Arg Arg Ala Trp His Gly Met Ala Thr Leu Leu Asn Lys Leu Tyr	
481 486 491 496	
gtg atc ggg ggc agc aac aac gat gcc gga tac agg agg gac gtg cac	1655
Val Ile Gly Gly Ser Asn Asn Asp Ala Gly Tyr Arg Arg Asp Val His	
497 502 507 512	
cag gtg gcc tgc tac agc tgc acg tct gga cag tgg tca tct gtc tgc	1703
Gln Val Ala Cys Tyr Ser Cys Thr Ser Gly Gln Trp Ser Ser Val Cys	
513 518 523 528	
cca ctc cct gct ggg cac ggt gag cct ggc att gct gtg ctg gac aac	1751
Pro Leu Pro Ala Gly His Gly Glu Pro Gly Ile Ala Val Leu Asp Asn	
529 534 539 544	
agg atc tat gtg tta ggt ggc cgc tca cac aac cgc ggc agc cgc aca	1799
Arg Ile Tyr Val Leu Gly Gly Arg Ser His Asn Arg Gly Ser Arg Thr	
545 550 555 560	
ggc tac gtg cac att tac gat gtg gag aag gac tgc tgg gag gaa ggg	1847
Gly Tyr Val His Ile Tyr Asp Val Glu Lys Asp Cys Trp Glu Glu Gly	
561 566 571 576	
ccc cag ctg gac aac tcc atc tca ggc ctg gcg gcc tgt gtg ctc acc	1895
Pro Gln Leu Asp Asn Ser Ile Ser Gly Leu Ala Ala Cys Val Leu Thr	

577	582	587	592	
ctg ccc cgc tcc ctg ctc ctt gag ccg ccc cgc ggg acc cct gac cgc				1943
Leu Pro Arg Ser Leu Leu Leu Glu Pro Pro Arg Gly Thr Pro Asp Arg				
593	598	603	608	
agc cag gcc gac ccg gac ttt gcc tct gag gtg atg agt gtg tct gac				1991
Ser Gln Ala Asp Pro Asp Phe Ala Ser Glu Val Met Ser Val Ser Asp				
609	614	619	624	
tgg gag gag ttt gac aac tcc agt gag gac tag gctccctg tgccctggcat				2042
Trp Glu Glu Phe Asp Asn Ser Ser Glu Asp *				
625	630	635		
cagaggggaag ggaggctggg gctgcagggc agtgaaaccc acgcagccta ggccagagca				2102
ctttactcca ggcaggggccc ctgcccctgt tggccacagc ttatggggccc tgccctcttt				2162
cttcacacca gccccttggc cagcctgccg caggcatctc agggccatgc agatcccagg				2222
ctgtggatta cgtcactgca ggaactgctt ctgaaaggct ttggccttcc tcagtgagcc				2282
ctggaggggt tggccttctc tcctccctgc ctagatcagt ccttctccaa aaggacctgg				2342
gagctggcag cctgggcagg ggggctgagg cacgtggtag ccctctttct gtgaatgggg				2402
tggggctgtg ggggcagctg ggggttgagg atgagagctc ctgaggggca gaggagcaga				2462
gatgcatcag ctgcctggg actggctctg tgataaaaag acccctcccg ctgggttttc				2522
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gcggcggcgg cggccggacc cagactggta gtgaggcgtt ggaccccgag ccgctgca	118
atg ccg ctg gag ctg gag ctg tgt ccc ggg cgc tgg gtg ggc ggg caa	166
Met Pro Leu Glu Leu Glu Leu Cys Pro Gly Arg Trp Val Gly Gly Gln	
1 5 10 15	
cac ccg tgc ttc atc att gcc gag atc ggc cag aac cac cag ggc gac	214
His Pro Cys Phe Ile Ile Ala Glu Ile Gly Gln Asn His Gln Gly Asp	
17 / 22 27 32	
ctg gac gta gcc aag cgc atg atc cgc atg gcc aag gag tgt ggg gct	262

Leu Asp Val Ala Lys Arg Met Ile Arg Met Ala Lys Glu Cys Gly Ala	
33 38 43 48	
gat tgt gcc aag ttc cag aag agt gag cta gaa ttc aag ttt aat cgg	310
Asp Cys Ala Lys Phe Gln Lys Ser Glu Leu Glu Phe Lys Phe Asn Arg	
49 54 59 64	
aaa gcc ttg gac agg cca tac acc tcg aag cat tcc tgg ggg aag acg	358
Lys Ala Leu Asp Arg Pro Tyr Thr Ser Lys His Ser Trp Gly Lys Thr	
65 70 75 80	
tac ggg gag cac aaa cga cat ctg gag ttc agc cat gac cag tac agg	406
Tyr Gly Glu His Lys Arg His Leu Glu Phe Ser His Asp Gln Tyr Arg	
81 86 91 96	
gag ctg cag agg tac gcc gag gag gtt ggg atc ttc ttc act gcc tct	454
Glu Leu Gln Arg Tyr Ala Glu Glu Val Gly Ile Phe Phe Thr Ala Ser	
97 102 107 112	
ggc atg gat gag atg gca gtt gaa ttc ctg cat gaa ctg aat gtt cca	502
Gly Met Asp Glu Met Ala Val Glu Phe Leu His Glu Leu Asn Val Pro	
113 118 123 128	
ttt ttc aaa gtt gga tct gga gac act aat aat ttt cct tat ctg gaa	550
Phe Phe Lys Val Gly Ser Gly Asp Thr Asn Asn Phe Pro Tyr Leu Glu	
129 134 139 144	
aag aca gcc aaa aaa ggt cgc cca atg gtg atc tcc agt ggg atg cag	598
Lys Thr Ala Lys Lys Gly Arg Pro Met Val Ile Ser Ser Gly Met Gln	
145 150 155 160	
tca atg gac acc atg aag caa gtt tat cag atc gtg aag ccc ctc aac	646
Ser Met Asp Thr Met Lys Gln Val Tyr Gln Ile Val Lys Pro Leu Asn	
161 166 171 176	
ccc aac ttc tgc ttc ttg cag tgt acc agc gca tac ccg ctc cag cct	694
Pro Asn Phe Cys Phe Leu Gln Cys Thr Ser Ala Tyr Pro Leu Gln Pro	
177 182 187 192	
gag gac gtc aac ctg cgg gtc atc tcg gaa tat cag aag ctc ttt cct	742
Glu Asp Val Asn Leu Arg Val Ile Ser Glu Tyr Gln Lys Leu Phe Pro	
193 198 203 208	
gac att ccc ata ggg tat tct ggg cat gaa aca ggc ata gcg ata tct	790
Asp Ile Pro Ile Gly Tyr Ser Gly His Glu Thr Gly Ile Ala Ile Ser	
209 214 219 224	
gtg gcc gca gtg gct ctg ggg gcc aag gtg ttg gaa cgt cac ata act	838
Val Ala Ala Val Ala Leu Gly Ala Lys Val Leu Glu Arg His Ile Thr	
225 230 235 240	
ttg gac aag acc tgg aag ggg agt gac cac tcg gcc tcg ctg gag cct	886
Leu Asp Lys Thr Trp Lys Gly Ser Asp His Ser Ala Ser Leu Glu Pro	
241 246 251 256	
gga gaa ctg gcc gag ctg gtg cgg tca gtg cgt ctt gtg gag cgt gcc	934
Gly Glu Leu Ala Glu Leu Val Arg Ser Val Arg Leu Val Glu Arg Ala	

257	262	267	272	
ctg ggc tcc cca acc aag cag ctg ctg ccc tgt gag atg gcc tgc aat				982
Leu Gly Ser Pro Thr Lys Gln Leu Leu Pro Cys Glu Met Ala Cys Asn				
273	278	283	288	
gag aag ctg ggc aag tct gtg gtg gcc aaa gtg aaa att ccg gaa ggc				1030
Glu Lys Leu Gly Lys Ser Val Val Ala Lys Val Lys Ile Pro Glu Gly				
289	294	299	304	
acc att cta aca atg gac atg ctc acc gtg aag gtg ggt gag ccc aaa				1078
Thr Ile Leu Thr Met Asp Met Leu Thr Val Lys Val Gly Glu Pro Lys				
305	310	315	320	
ggc tat cct cct gaa gac atc ttt aat cta gtg ggc aag aag gtc ctg				1126
Gly Tyr Pro Pro Glu Asp Ile Phe Asn Leu Val Gly Lys Lys Val Leu				
321	326	331	336	
gtc act gtt gaa gag gat gac acc atc atg gaa gaa ttg gta gat aat				1174
Val Thr Val Glu Glu Asp Asp Thr Ile Met Glu Glu Leu Val Asp Asn				
337	342	347	352	
cat ggc aaa aaa atc aag tct taa aaataaagtg ccattctctg aaaaaaaaaa				1228
His Gly Lys Lys Ile Lys Ser *				
353	358			
aa				1230

257
262
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gccgcateccc tcccgcagcg acggcggccc gggacccgcg ggctgtgaac c atg aac	177
	Met Asn
	1
acc cgc aat aga gtg gtg aac tcc ggg ctc ggc gcc tcc cct gcc tcc	225
Thr Arg Asn Arg Val Val Asn Ser Gly Leu Gly Ala Ser Pro Ala Ser	
3	8
	13
	18
cgc ccg acc cgg gat ccc cag gac cct tct ggg cgg caa ggg gag ctg	273
Arg Pro Thr Arg Asp Pro Gln Asp Pro Ser Gly Arg Gln Gly Glu Leu	
19	24
	29
	34

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Ser Pro Val Glu Asp Gln Arg Glu Gly Leu Glu Ala Ala Pro Lys Gly	
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Pro Ser Arg Glu Ser Val Val His Ala Gly Gln Arg Arg Thr Ser Ala	
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tac acc ttg ata gca cca aat ata aac cgg aga aat gag ata caa aga	417
Tyr Thr Leu Ile Ala Pro Asn Ile Asn Arg Arg Asn Glu Ile Gln Arg	
67 72 77 82	
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Ile Ala Glu Gln Glu Leu Ala Asn Leu Glu Lys Trp Lys Glu Gln Asn	
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Arg Ala Lys Pro Val His Leu Val Pro Arg Arg Leu Gly Gly Ser Gln	
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Ser Glu Thr Glu Val Arg Gln Lys Gln Gln Leu Gln Leu Met Gln Ser	
115 120 125 130	
aaa tac aag caa aag cta aaa aga gaa gaa tct gta aga atc aag aag	609
Lys Tyr Lys Gln Lys Leu Lys Arg Glu Glu Ser Val Arg Ile Lys Lys	
131 136 141 146	
gaa gct gaa gaa gct gaa ctc caa aaa atg aag gca att cag aga gag	657
Glu Ala Glu Glu Ala Glu Leu Gln Lys Met Lys Ala Ile Gln Arg Glu	
147 152 157 162	
aag agc aat aaa ctg gag gag aaa aaa aga ctt caa gaa aac ctt aga	705
Lys Ser Asn Lys Leu Glu Glu Lys Lys Arg Leu Gln Glu Asn Leu Arg	
163 168 173 178	
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Arg Glu Ala Phe Arg Glu His Gln Gln Tyr Lys Thr Ala Glu Phe Leu	
179 184 189 194	
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Ser Lys Leu Asn Thr Glu Ser Pro Asp Arg Ser Ala Cys Gln Ser Ala	
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Val Cys Gly Pro Gln Ser Ser Thr Trp Ala Arg Ser Trp Ala Tyr Arg	
211 216 221 226	
gat tct cta aag gca gaa gaa aac aga aaa ttg caa aag atg aag gat	897
Asp Ser Leu Lys Ala Glu Glu Asn Arg Lys Leu Gln Lys Met Lys Asp	
227 232 237 242	
gaa caa cat caa aag agt gaa tta ctg gaa ctg aaa cgg cag cag caa	945
Glu Gln His Gln Lys Ser Glu Leu Leu Glu Leu Lys Arg Gln Gln Gln	
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Met Ser Thr Ile Ala Ala	
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Phe Tyr Gly Gly Lys Ser Ile Leu Ile Thr Gly Ala Thr Gly Phe Leu	
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ggc aaa gtg cta atg gag aag ctg ttt cgc acc agc cca gac ctg aaa	271
Gly Lys Val Leu Met Glu Lys Leu Phe Arg Thr Ser Pro Asp Leu Lys	
23 28 33 38	
gtc att tac atc ctt gtg agg ccc aag gct ggc cag aca ctg cag cag	319
Val Ile Tyr Ile Leu Val Arg Pro Lys Ala Gly Gln Thr Leu Gln Gln	
39 44 49 54	
agg gtt ttc cag atc cta gac agt aag cta ttt gag aaa gtc aaa gaa	367
Arg Val Phe Gln Ile Leu Asp Ser Lys Leu Phe Glu Lys Val Lys Glu	
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gtt tgt cca aat gtg cat gag aag atc aga gct att tat gca gat ctc	415
Val Cys Pro Asn Val His Glu Lys Ile Arg Ala Ile Tyr Ala Asp Leu	
71 76 81 86	
aat cag aat gac ttt gcc atc agc aaa gag gac atg cag gag ctt ctc	463
Asn Gln Asn Asp Phe Ala Ile Ser Lys Glu Asp Met Gln Glu Leu Leu	
87 92 97 102	
tcc tgt aca aac ata ata ttt cac tgt gca gcc act gta cgc ttt gac	511
Ser Cys Thr Asn Ile Ile Phe His Cys Ala Ala Thr Val Arg Phe Asp	
103 108 113 118	
gac act ctc aga cat gct gtg caa ctt aac gtc act gcc acc cgg cag	559
Asp Thr Leu Arg His Ala Val Gln Leu Asn Val Thr Ala Thr Arg Gln	
119 124 129 134	
ctc ttg ctt atg gct agt cag atg cca aag ctg gaa gcc ttt ata cat	607
Leu Leu Leu Met Ala Ser Gln Met Pro Lys Leu Glu Ala Phe Ile His	
135 140 145 150	
atc tct act gcc tat tca aat tgt aac ctg aag cac atc gat gaa gtt	655
Ile Ser Thr Ala Tyr Ser Asn Cys Asn Leu Lys His Ile Asp Glu Val	
151 156 161 166	
atc tat ccg tgc cct gtg gag cca aaa aaa atc att gat tcc ctt gag	703
Ile Tyr Pro Cys Pro Val Glu Pro Lys Lys Ile Ile Asp Ser Leu Glu	
167 172 177 182	

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Trp Leu Asp Asp Ala Ile Ile Asp Glu Ile Thr Pro Lys Leu Ile Arg	
183 188 193 198	
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Asp Trp Pro Asn Ile Tyr Thr Tyr Thr Lys Ala Leu Gly Glu Met Val	
199 204 209 214	
gtg cag cac gag agc agg atc ctg aac att gcc atc ata agg ccc tcc	847
Val Gln His Glu Ser Arg Ile Leu Asn Ile Ala Ile Ile Arg Pro Ser	
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ata aat gga cct aat gga atc att att gcg act ggg aaa ggg ttt ctt	943
Ile Asn Gly Pro Asn Gly Ile Ile Ile Ala Thr Gly Lys Gly Phe Leu	
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cgg gcc ata aaa gct act cca atg gct gtg gca gac gta att cca gtt	991
Arg Ala Ile Lys Ala Thr Pro Met Ala Val Ala Asp Val Ile Pro Val	
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Asp Thr Val Val Asn Leu Met Leu Ala Val Gly Trp Tyr Thr Ala Val	
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His Arg Pro Lys Ser Thr Leu Val Tyr His Ile Thr Ser Gly Asn Met	
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Asn Pro Cys Asn Trp His Lys Met Gly Val Gln Val Leu Ala Thr Phe	
311 316 321 326	
gaa aaa atc cca ttt gag aga cct ttc agg agg cca aat gct aat ttt	1183
Glu Lys Ile Pro Phe Glu Arg Pro Phe Arg Arg Pro Asn Ala Asn Phe	
327 332 337 342	
acc agc aac agc ttc aca tca cag tac tgg aat gcg gtc agc cac cgg	1231
Thr Ser Asn Ser Phe Thr Ser Gln Tyr Trp Asn Ala Val Ser His Arg	
343 348 353 358	
gcc cct gcc att atc tat gac tgc tat ctg cgg ctc act gga agg aag	1279
Ala Pro Ala Ile Ile Tyr Asp Cys Tyr Leu Arg Leu Thr Gly Arg Lys	
359 364 369 374	
ccc agg atg aca aag ctc atg aat cgg ctt tta aga act gtt tcc atg	1327
Pro Arg Met Thr Lys Leu Met Asn Arg Leu Leu Arg Thr Val Ser Met	
375 380 385 390	
ttg gag tat ttc atc aac cgg agt tgg gaa tgg agc acg tac aat aca	1375
Leu Glu Tyr Phe Ile Asn Arg Ser Trp Glu Trp Ser Thr Tyr Asn Thr	
391 396 401 406	
gaa atg ctg atg tct gag ctg agt cct gaa gac cag aga gta ttc aac	1423

Glu Met Leu Met Ser	Glu Leu Ser Pro Glu Asp Gln Arg Val Phe Asn	
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Phe Asp Val Arg Gln Leu Asn Trp Leu Glu Tyr Ile Glu Asn Tyr Val		
423 428 433 438		
ttg gga gtt aaa aaa tac tta ttg aaa gag gat atg gct ggg atc cca		1519
Leu Gly Val Lys Lys Tyr Leu Leu Lys Glu Asp Met Ala Gly Ile Pro		
439 444 449 454		
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Lys Ala Lys Gln Arg Leu Lys Arg Leu Arg Asn Ile His Tyr Leu Phe		
455 460 465 470		
aat act gcc ctc ttc ctt atc gcc tgg cgc ctt ctc att gca aga tct		1615
Asn Thr Ala Leu Phe Leu Ile Ala Trp Arg Leu Leu Ile Ala Arg Ser		
471 476 481 486		
cag atg gct cgg aat gtc tgg ttc ttc att gta agc ttc tgt tat aaa		1663
Gln Met Ala Arg Asn Val Trp Phe Phe Ile Val Ser Phe Cys Tyr Lys		
487 492 497 502		
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Phe Leu Ser Tyr Phe Arg Ala Ser Arg His Gly Ser Lys Phe Lys Ser		
503 508 513 518		
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Ile *		
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ggt	gtg	aaa	aca	ttt	act	cat	agc	tcc	tct	tcc	cac	agc	cag	gaa	atg	165
Gly	Val	Lys	Thr	Phe	Thr	His	Ser	Ser	Ser	Ser	His	Ser	Gln	Glu	Met	
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ctt	gga	aag	cta	aat	atg	ctg	cga	aat	gat	gga	cat	ttt	tgt	gat	atc	213
Leu	Gly	Lys	Leu	Asn	Met	Leu	Arg	Asn	Asp	Gly	His	Phe	Cys	Asp	Ile	
18					23					28					33	
act	att	cgt	gtc	cag	gac	aaa	atc	ttc	cgg	gca	cat	aag	gtg	gta	cta	261
Thr	Ile	Arg	Val	Gln	Asp	Lys	Ile	Phe	Arg	Ala	His	Lys	Val	Val	Leu	
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gca	gct	tgc	agt	gat	ttc	ttt	cgc	acc	aaa	ctt	gta	ggc	caa	gcc	gag	309
Ala	Ala	Cys	Ser	Asp	Phe	Phe	Arg	Thr	Lys	Leu	Val	Gly	Gln	Ala	Glu	
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gat	gag	aac	aag	aat	gtg	ttg	gat	ctg	cat	cat	gtt	aca	gtg	act	ggc	357
Asp	Glu	Asn	Lys	Asn	Val	Leu	Asp	Leu	His	His	Val	Thr	Val	Thr	Gly	
66					71					76					81	
ttt	ata	cct	ctt	tta	gaa	tat	gct	tac	aca	gcc	act	cta	tca	att	aac	405
Phe	Ile	Pro	Leu	Leu	Glu	Tyr	Ala	Tyr	Thr	Ala	Thr	Leu	Ser	Ile	Asn	
82					87					92					97	
aca	gaa	aat	att	att	gat	gtt	cta	gca	gca	gcc	agc	tat	atg	caa	atg	453
Thr	Glu	Asn	Ile	Ile	Asp	Val	Leu	Ala	Ala	Ala	Ser	Tyr	Met	Gln	Met	
98					103					108					113	
ttc	agt	gtt	gcc	agc	acc	tgc	tca	gag	ttc	atg	aaa	tca	agc	att	tta	501
Phe	Ser	Val	Ala	Ser	Thr	Cys	Ser	Glu	Phe	Met	Lys	Ser	Ser	Ile	Leu	
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Trp	Asn	Thr	Pro	Asn	Ser	Gln	Pro	Glu	Lys	Gly	Leu	Asp	Ala	Gly	Gln	
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gaa	aat	aat	tct	aac	tgc	aat	ttt	act	tct	cga	gat	ggg	agc	att	tct	597
Glu	Asn	Asn	Ser	Asn	Cys	Asn	Phe	Thr	Ser	Arg	Asp	Gly	Ser	Ile	Ser	
146					151					156					161	
ccc	gtg	tcc	tca	gag	tgc	aga	gtg	gta	gaa	aga	acc	att	cct	gtc	tgc	645
Pro	Val	Ser	Ser	Glu	Cys	Arg	Val	Val	Glu	Arg	Thr	Ile	Pro	Val	Cys	
162					167					172					177	
cga	gaa	tcc	cgg	aga	aag	cgc	aaa	agc	tac	att	gtt	atg	tct	cct	gaa	693
Arg	Glu	Ser	Arg	Arg	Lys	Arg	Lys	Ser	Tyr	Ile	Val	Met	Ser	Pro	Glu	
178					183					188					193	
agt	cct	gta	aag	tgt	ggc	aca	caa	aca	agc	tca	ccc	cag	gta	ttg	aat	741
Ser	Pro	Val	Lys	Cys	Gly	Thr	Gln	Thr	Ser	Ser	Pro	Gln	Val	Leu	Asn	
194					199					204					209	
tct																

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Pro Glu Lys Val Lys Gln Ala Glu Asn Thr Arg Thr Leu Glu Leu Pro				
242	247	252	257	
ggc cca tct gag acc ggt aga aga atg gct gat tat gtg act tgt gag				933
Gly Pro Ser Glu Thr Gly Arg Arg Met Ala Asp Tyr Val Thr Cys Glu				
258	263	268	273	
agc aca aaa act acc ttg cct tta ggt acc gaa gaa gat gtc cgg gtc				981
Ser Thr Lys Thr Thr Leu Pro Leu Gly Thr Glu Glu Asp Val Arg Val				
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Ser Ile Gly Ser Val Asp Glu Gly Val Ser Glu Gly Leu Pro Thr Leu				
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Gln Ser Thr Ser Ser Thr Asn Ala Pro Pro Asp Asp Asp Arg Ser				
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Val Leu Thr *				
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aacatctgcc aaagtctgat ctgtataccc ataactccct cctgcttgat atttcccata				1696
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cgaa atg agc cag ggg cgt gga aaa tat gac ttc tat att ggt ctg gga 349
Met Ser Gln Gly Arg Gly Lys Tyr Asp Phe Tyr Ile Gly Leu Gly
1 5 10
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Leu Ala Met Ser Ser Ser Ile Phe Ile Gly Gly Ser Phe Ile Leu Lys
16 21 26 31
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32 37 42 47
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Gln Gly Gly His Ala Tyr Leu Lys Glu Trp Leu Trp Trp Ala Gly Leu
48 53 58 63
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Ser Ala Ile Leu Ser Ser Tyr Phe Leu Asn Glu Arg Leu Asn Leu His	
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Gly Lys Ile Gly Cys Leu Leu Ser Ile Leu Gly Ser Thr Val Met Val	
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Ile His Ala Pro Lys Glu Glu Glu Ile Glu Thr Leu Asn Glu Met Ser	
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His Lys Leu Gly Asp Pro Gly Phe Val Val Phe Ala Thr Leu Val Val	
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Thr Asn Ile Leu Val Tyr Ile Thr Ile Cys Ser Val Ile Gly Ala Phe	
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Ala Gly Lys Pro Val Leu Arg His Pro Leu Ala Trp Ile Leu Leu Leu	
208 213 218 223	
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224 229 234 239	
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Thr Ile Ile Val Gly Ile Phe Leu Leu His Ala Phe Lys Asp Val Ser	

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304	309	314	319	
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Glu Ser Leu Thr Cys Gly Ile Glu Gln His Thr Gly Glu Asn Val Ser				
336	341	346	351	
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Arg Arg Asn Gly Asn Leu Thr Ala Phe *				
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Met Ala Leu Gln Val Glu	
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ctg gta ccc acc ggg gag atc atc cgc gtg gtt cat ccc cac agg ccc	282
Leu Val Pro Thr Gly Glu Ile Ile Arg Val Val His Pro His Arg Pro	
7 12 17 22	
tgc aag ctt gcc ctg ggc agt gac ggg gtt cgg gtg acc atg gag agt	330
Cys Lys Leu Ala Leu Gly Ser Asp Gly Val Arg Val Thr Met Glu Ser	
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Ala Leu Thr Ala Arg Asp Arg Val Gly Val Gln Asp Phe Val Leu Leu	
39 44 49 54	
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Glu Asn Phe Thr Ser Glu Ala Ala Phe Ile Glu Asn Leu Arg Arg Arg	
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Phe Arg Glu Asn Leu Ile Tyr Thr Tyr Ile Gly Pro Val Leu Val Ser	
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Val Asn Pro Tyr Arg Asp Leu Gln Ile Tyr Ser Arg Gln His Met Glu	
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Arg Tyr Arg Gly Val Ser Phe Tyr Glu Val Pro Pro His Leu Phe Ala	
103 108 113 118	
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Val Ala Asp Thr Val Tyr Arg Ala Leu Arg Thr Glu Arg Arg Asp Gln	
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Ala Val Met Ile Ser Gly Glu Ser Gly Ala Gly Lys Thr Glu Ala Thr	
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Gly	Gly	Ala	Val	Arg	Asp	Arg	Leu	Leu	Gln	Ser	Asn	Pro	Val	Leu	Glu	
167					172					177					182	
gcc	ttt	gga	aat	gcc	aag	acc	ctc	cgg	aac	gat	aac	tcc	agc	agg	ttc	810
Ala	Phe	Gly	Asn	Ala	Lys	Thr	Leu	Arg	Asn	Asp	Asn	Ser	Ser	Arg	Phe	
183					188					193					198	
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Gly	Lys	Tyr	Met	Asp	Val	Gln	Phe	Asp	Phe	Lys	Gly	Ala	Pro	Val	Gly	
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ggc	cac	atc	ctc	agt	tac	ctc	ctg	gaa	aag	tca	cga	gtg	gtg	cac	cag	906
Gly	His	Ile	Leu	Ser	Tyr	Leu	Leu	Glu	Lys	Ser	Arg	Val	Val	His	Gln	
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Asn	His	Gly	Glu	Arg	Asn	Phe	His	Ile	Phe	Tyr	Gln	Leu	Leu	Glu	Gly	
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Gly	Glu	Glu	Glu	Thr	Leu	Arg	Arg	Leu	Gly	Leu	Glu	Arg	Asn	Pro	Gln	
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Ser	Tyr	Leu	Tyr	Leu	Val	Lys	Gly	Gln	Cys	Ala	Lys	Val	Ser	Ser	Ile	
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aac	gac	aag	agt	gac	tgg	aag	gtc	gtc	agg	aag	gct	ctg	aca	gtc	att	1098
Asn	Asp	Lys	Ser	Asp	Trp	Lys	Val	Val	Arg	Lys	Ala	Leu	Thr	Val	Ile	
279					284					289					294	
gat	ttc	acc	gag	gat	gaa	gtg	gag	gac	ctg	ctg	agc	atc	gtg	gcc	agc	1146
Asp	Phe	Thr	Glu	Asp	Glu	Val	Glu	Asp	Leu	Leu	Ser	Ile	Val	Ala	Ser	
295					300					305					310	
gtc	ctt	cat	ttg	ggc	aac	atc	cac	ttt	gct	gcc	aac	gag	gag	agc	aat	1194
Val	Leu	His	Leu	Gly	Asn	Ile	His	Phe	Ala	Ala	Asn	Glu	Glu	Ser	Asn	
311					316					321					326	
gcc	cag	gtc	acc	acc	gag	aac	cag	ctc	aag	tat	ctg	acc	agg	ctc	ctc	1242
Ala	Gln	Val	Thr	Thr	Glu	Asn	Gln	Leu	Lys	Tyr	Leu	Thr	Arg	Leu	Leu	
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agc	gtg	gaa	ggc	tcg	acg	ctg	cga	gaa	gcc	ctg	aca	cac	agg	aag	atc	1290
Ser	Val	Glu	Gly	Ser	Thr	Leu	Arg	Glu	Ala	Leu	Thr	His	Arg	Lys	Ile	
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Ile	Ala	Lys	Gly	Glu	Glu	Leu	Leu	Ser	Pro	Leu	Asn	Leu	Glu	Gln	Ala	
359					364					369					374	
gcg	tac	gca	cga	gac	gcc	ctc	gcc	aag	gct	gtg	tac	agc	cgc	act	ttt	1386
Ala	Tyr	Ala	Arg	Asp	Ala	Leu	Ala	Lys	Ala	Val	Tyr	Ser	Arg	Thr	Phe	

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Thr Trp Leu Val Gly Lys Ile Asn Arg Ser Leu Ala Ser Lys Asp Val				
391	396	401	406	
gag agc ccc agc tgg cgg agc acc acg gtt ctc ggg ctc ctg gat att				1482
Glu Ser Pro Ser Trp Arg Ser Thr Thr Val Leu Gly Leu Leu Asp Ile				
407	412	417	422	
tat ggc ttc gaa gtg ttt cag cat aac agc ttt gag cag ttc tgc atc				1530
Tyr Gly Phe Glu Val Phe Gln His Asn Ser Phe Glu Gln Phe Cys Ile				
423	428	433	438	
aat tac tgc aac gaa aag ctg cag cag ctc ttc atc gaa ctc ccg ctc				1578
Asn Tyr Cys Asn Glu Lys Leu Gln Gln Leu Phe Ile Glu Leu Pro Leu				
439	444	449	454	
aag tgc gag cag gag gaa tac gag gca gag ggc atc gcg tgg gaa ccc				1626
Lys Ser Glu Gln Glu Glu Tyr Glu Ala Glu Gly Ile Ala Trp Glu Pro				
455	460	465	470	
gtc cag tat ttc aac aac aaa atc atc tgt gat ctg gtg gag gag aag				1674
Val Gln Tyr Phe Asn Asn Lys Ile Ile Cys Asp Leu Val Glu Glu Lys				
471	476	481	486	
ttt aag ggc atc atc tgc att ttg gat gag gag tgt ctg cgc ccc ggg				1722
Phe Lys Gly Ile Ile Ser Ile Leu Asp Glu Glu Cys Leu Arg Pro Gly				
487	492	497	502	
gag gcc aca gac ctg acc ttc ctg gag aag ctg gag gat act gtc aag				1770
Glu Ala Thr Asp Leu Thr Phe Leu Glu Lys Leu Glu Asp Thr Val Lys				
503	508	513	518	
cac cat cca cac ttc ctg acg cac aag ctg gct gac cag cgg acc agg				1818
His His Pro His Phe Leu Thr His Lys Leu Ala Asp Gln Arg Thr Arg				
519	524	529	534	
aaa tct ctg ggc cga ggg gaa ttc cgc ctt ctg cac tat gcg ggg gag				1866
Lys Ser Leu Gly Arg Gly Glu Phe Arg Leu Leu His Tyr Ala Gly Glu				
535	540	545	550	
gtg acc tac agc gtg acc ggg ttt ctg gac aaa aac aat gac ctt ctc				1914
Val Thr Tyr Ser Val Thr Gly Phe Leu Asp Lys Asn Asn Asp Leu Leu				
551	556	561	566	
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Phe Arg Asn Leu Lys Glu Thr Met Cys Ser Ser Lys Asn Pro Ile Met				
567	572	577	582	
agc cag tgc ttc gac cgg agc gag ctc agt gac aag aag cgg cca gag				2010
Ser Gln Cys Phe Asp Arg Ser Glu Leu Ser Asp Lys Lys Arg Pro Glu				
583	588	593	598	
acg gtc gcc acc cag ttc aag atg agc ctc ctg cag ctg gtg gag atc				2058
Thr Val Ala Thr Gln Phe Lys Met Ser Leu Leu Gln Leu Val Glu Ile				
599	604	609	614	

ctg cag tct aag gag ccc gcc tac gtc cgc tgc atc aaa ccc aat gat	2106
Leu Gln Ser Lys Glu Pro Ala Tyr Val Arg Cys Ile Lys Pro Asn Asp	
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gcc aaa cag ccc ggc cgc ttt gac gag gtg ctg atc cgc cac cag gtg	2154
Ala Lys Gln Pro Gly Arg Phe Asp Glu Val Leu Ile Arg His Gln Val	
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aag tac ctg ggg ctg ttg gaa aac ctg cgc gtg cgc aga gcc ggc ttt	2202
Lys Tyr Leu Gly Leu Leu Glu Asn Leu Arg Val Arg Arg Ala Gly Phe	
647 652 657 662	
gcc tat cgc cgc aaa tac gaa gct ttc ctg caa agg tac aag tca ctg	2250
Ala Tyr Arg Arg Lys Tyr Glu Ala Phe Leu Gln Arg Tyr Lys Ser Leu	
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Cys Pro Glu Thr Trp Pro Thr Trp Ala Gly Arg Pro Gln Asp Gly Val	
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Ala Val Leu Val Arg His Leu Gly Tyr Lys Pro Glu Glu Tyr Lys Met	
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Gly Arg Thr Lys Ile Phe Ile Arg Phe Pro Lys Thr Leu Phe Ala Thr	
711 716 721 726	
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Glu Asp Ala Leu Glu Val Arg Arg Gln Ser Leu Ala Thr Lys Ile Gln	
727 732 737 742	
gct gcc tgg agg ggc ttt cac tgg cgg cag aaa ttc ctc cgg gtg aag	2490
Ala Ala Trp Arg Gly Phe His Trp Arg Gln Lys Phe Leu Arg Val Lys	
743 748 753 758	
aga tca gcc atc tgc atc cag tgc tgg tgg cgt gga aca ctg ggc cgg	2538
Arg Ser Ala Ile Cys Ile Gln Ser Trp Trp Arg Gly Thr Leu Gly Arg	
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agg aag gca gcc aag agg aag tgg gcg gca cag acc atc cgg cgg ctc	2586
Arg Lys Ala Ala Lys Arg Lys Trp Ala Ala Gln Thr Ile Arg Arg Leu	
775 780 785 790	
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Ile Arg Gly Phe Ile Leu Arg His Ala Pro Arg Cys Pro Glu Asn Ala	
791 796 801 806	
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Phe Phe Leu Asp His Val Arg Thr Ser Phe Leu Leu Asn Leu Arg Arg	
807 812 817 822	
cag ctg ccc cgg aat gtc ctg gac acc tgc tgg ccc acg ccc cca cct	2730
Gln Leu Pro Arg Asn Val Leu Asp Thr Ser Trp Pro Thr Pro Pro Pro	
823 828 833 838	

Arg *
1063

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ccgagcgggag agcgcggggc gttttctttc ctgggtgtccc gtcgcggtt gggacccggc 180
aag atg ggc aag aag ggc aag aag gag aag aag ggc cgc ggc gcg gag 228
Met Gly Lys Lys Gly Lys Lys Glu Lys Lys Gly Arg Gly Ala Glu
1 5 10
aag acg gcc gcc aag atg gag aag aag gtg tct aag cgc tcg cgg aag 276
Lys Thr Ala Ala Lys Met Glu Lys Lys Val Ser Lys Arg Ser Arg Lys
16 21 26 31
gag gag gaa gac ctg gaa gcg ctc ata gcc cat ttc cag aca ctc gat 324
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Glu Glu Glu Asp Leu Glu Ala Leu Ile Ala His Phe Gln Thr Leu Asp	
32 37 42 47	
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Ala Lys Arg Thr Gln Thr Val Glu Leu Pro Cys Pro Pro Pro Ser Pro	
48 53 58 63	
agg tta aat gcc tcc ctc tcg gtt cat cct gag aaa gat gag tta atc	420
Arg Leu Asn Ala Ser Leu Ser Val His Pro Glu Lys Asp Glu Leu Ile	
64 69 74 79	
ctt ttt gga ggt gaa tat ttc aac ggc caa aaa act ttt ttg tat aac	468
Leu Phe Gly Gly Glu Tyr Phe Asn Gly Gln Lys Thr Phe Leu Tyr Asn	
80 85 90 95	
gag ctc tat gtc tac aat atc aga aag gac acc tgg acc aaa gtt gac	516
Glu Leu Tyr Val Tyr Asn Ile Arg Lys Asp Thr Trp Thr Lys Val Asp	
96 101 106 111	
atc ccc agt cca cct ccg agg cgc tgt gct cac cag gcg gtg gta gtg	564
Ile Pro Ser Pro Pro Pro Arg Arg Cys Ala His Gln Ala Val Val Val	
112 117 122 127	
cct caa ggt ggc gga cag ctg tgg gtc ttt gga ggg gag ttt gcc tct	612
Pro Gln Gly Gly Gly Gln Leu Trp Val Phe Gly Gly Glu Phe Ala Ser	
128 133 138 143	
ccc aac gga gag cag ttc tac cac tac aag gat ctc tgg gtc ctg cat	660
Pro Asn Gly Glu Gln Phe Tyr His Tyr Lys Asp Leu Trp Val Leu His	
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ttg gcc acc aag acc tgg gaa caa gtc aaa tca aca ggc ggt cct tcg	708
Leu Ala Thr Lys Thr Trp Glu Gln Val Lys Ser Thr Gly Gly Pro Ser	
160 165 170 175	
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Gly Arg Ser Gly His Arg Met Val Ala Trp Lys Arg Gln Leu Ile Leu	
176 181 186 191	
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Phe Gly Gly Phe His Glu Ser Thr Arg Asp Tyr Ile Tyr Tyr Asn Asp	
192 197 202 207	
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Val Tyr Ala Phe Asn Leu Asp Thr Phe Thr Trp Ser Lys Leu Ser Pro	
208 213 218 223	
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Ser Gly Thr Gly Pro Thr Pro Arg Ser Gly Cys Gln Met Ser Val Thr	
224 229 234 239	
ccc cag ggc ggc atc gtc gtc tat ggg ggc tac tcg aaa cag aga gtt	948
Pro Gln Gly Gly Ile Val Val Tyr Gly Gly Tyr Ser Lys Gln Arg Val	
240 245 250 255	
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Lys Lys Asp Val Asp Lys Gly Thr Arg His Ser Asp Met Phe Leu Leu	

256	261	266	271	
aag cca gag gac gga aga gaa gac aag tgg gtt tgg act cgg atg aac				1044
Lys Pro Glu Asp Gly Arg Glu Asp Lys Trp Val Trp Thr Arg Met Asn				
272	277	282	287	
cct tcg ggg gtc aag ccc acc cca cgg tct ggc ttt tcc gtg gcc atg				1092
Pro Ser Gly Val Lys Pro Thr Pro Arg Ser Gly Phe Ser Val Ala Met				
288	293	298	303	
gcc ccg aat cac cag aca ctg ttc ttc ggg ggt gtc tgt gac gag gaa				1140
Ala Pro Asn His Gln Thr Leu Phe Phe Gly Gly Val Cys Asp Glu Glu				
304	309	314	319	
gag gag gag agc ctg tcg ggc gag ttc ttc aac gat ctg tac ttc tac				1188
Glu Glu Glu Ser Leu Ser Gly Glu Phe Phe Asn Asp Leu Tyr Phe Tyr				
320	325	330	335	
gac gcc acc agg aac cgt tgg ttt gag gga cag ctg aag aaa ctc agg				1236
Asp Ala Thr Arg Asn Arg Trp Phe Glu Gly Gln Leu Lys Lys Leu Arg				
336	341	346	351	
agt ggc tgg agg aga cgg act cgg aag agg aca gtg agg agg ttg agg				1284
Ser Gly Trp Arg Arg Arg Thr Arg Lys Arg Thr Val Arg Arg Leu Arg				
352	357	362	367	
gcg ccg agg gtg ggg tcg acg acg aag aca gcg gag agg aga gcg gtg				1332
Ala Pro Arg Val Gly Ser Thr Thr Lys Thr Ala Glu Arg Arg Ala Val				
368	373	378	383	
cgg agg act gag agc ccc tgc cag ggg cgc ctg gca agt gct gtg ccc				1380
Arg Arg Thr Glu Ser Pro Cys Gln Gly Arg Leu Ala Ser Ala Val Pro				
384	389	394	399	
acg tcc gcc cag gac cca gcc gtg ttg agt gaa gct ctt ggg gcc agc				1428
Thr Ser Ala Gln Asp Pro Ala Val Leu Ser Glu Ala Leu Gly Ala Ser				
400	405	410	415	
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Val Arg Pro Asp Ala Gln Glu Arg Ala Glu Gly Gly Trp Pro Arg Pro				
416	421	426	431	
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Gly Cys Glu Leu Ser Pro Met Val *				
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	Met Thr Asn	
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Ala Leu Met Gly Pro Ala Phe Ile Ala Ala Ile Gly Tyr Ile Asp Pro
20 25 30 35

cta	ctg	tgg	gtt	gtc	gtt	tgg	gcc	aac	ctg	atg	gcg	atg	ctg	att	cag	367
Leu	Leu	Trp	Val	Val	Val	Trp	Ala	Asn	Leu	Met	Ala	Met	Leu	Ile	Gln	
52					57					62					67	

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Gln Ile Arg Asp His Tyr Pro Arg Pro Val Val Trp Phe Tyr Trp Val
84 89 94 99

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Ala Ala Ile Gly Phe Lys Leu Ile Leu Gly Val Ser Leu Leu Gln Gly
116 121 126 131

cgc ggg caa aaa ccg ctg gag aaa gtg att ggc ggg tta ctg ttg ttt 655
 Arg Gly Gln Lys Pro Leu Glu Lys Val Ile Gly Gly Leu Leu Leu Phe
 148 153 158 163

1.

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Ala Gln Leu Gly Lys Gly Met Val Ile Pro Ser Leu Pro Thr Ser Glu	
180 185 190 195	
gcg gtc ttc ctg gca gca ggc gtg tta ggg gcg acg att atg ccg cat	799
Ala Val Phe Leu Ala Ala Gly Val Leu Gly Ala Thr Ile Met Pro His	
196 201 206 211	
gtg att tat ttg cac tcc tcg ctc act cag cat tta cat ggc ggt tcg	847
Val Ile Tyr Leu His Ser Ser Leu Thr Gln His Leu His Gly Gly Ser	
212 217 222 227	
cgt caa caa cgt tat tcc gcc acc aaa tgg gat gtg gct atc gcc atg	895
Arg Gln Gln Arg Tyr Ser Ala Thr Lys Trp Asp Val Ala Ile Ala Met	
228 233 238 243	
act att gcc ggt ttt gtc aat ctg gcg atg atg gct aca gct gcg gcg	943
Thr Ile Ala Gly Phe Val Asn Leu Ala Met Met Ala Thr Ala Ala Ala	
244 249 254 259	
gcg ttc cac ttt tcc ggt cat act ggt gtt gcc gat ctt gat gag gct	991
Ala Phe His Phe Ser Gly His Thr Gly Val Ala Asp Leu Asp Glu Ala	
260 265 270 275	
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Tyr Leu Thr Leu Gln Pro Leu Leu Ser His Ala Ala Ala Thr Val Phe	
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Gly Leu Ser Leu Val Ala Ala Gly Leu Ser Ser Thr Val Val Gly Thr	
292 297 302 307	
ctg gcg ggg cag gtg gtg atg cag ggc ttc att cgc ttt cat atc ccg	1135
Leu Ala Gly Gln Val Val Met Gln Gly Phe Ile Arg Phe His Ile Pro	
308 313 318 323	
ctg tgg gtg cgt cgt aca gtc acc atg ttg ccg tca ttt att gtc att	1183
Leu Trp Val Arg Arg Thr Val Thr Met Leu Pro Ser Phe Ile Val Ile	
324 329 334 339	
ctg atg gga tta gat ccg aca cgg att ctg gtt atg agt cag gta ctg	1231
Leu Met Gly Leu Asp Pro Thr Arg Ile Leu Val Met Ser Gln Val Leu	
340 345 350 355	
tta agt ttt ggt atc gct ctg gcg ctg gtt cca ctg ctg att ttc acc	1279
Leu Ser Phe Gly Ile Ala Leu Ala Leu Val Pro Leu Leu Ile Phe Thr	
356 361 366 371	
agt gac agc aag ttg atg ggc gat ctg gtg aac agc aaa cgc gta aaa	1327
Ser Asp Ser Lys Leu Met Gly Asp Leu Val Asn Ser Lys Arg Val Lys	
372 377 382 387	
cag aca ggc tgg gtg att gtg gtg ctg gtc gtg gcg ctg aat atc tgg	1375
Gln Thr Gly Trp Val Ile Val Val Leu Val Val Ala Leu Asn Ile Trp	
388 393 398 403	

ttg ttg gtg ggg acg gcg ctg gga ttg tag t tgaatgagcg tcgcatctgg	1426
Leu Leu Val Gly Thr Ala Leu Gly Leu *	
404 409	
cactattggc ggatgcggcg taaacgcctt atccgcccta cgcgttaaag agccgggttg	1486
taggcctgat aagacgcact agcgtcgcat caggcattgt gctccattgg cggacgcgtt	1546
taatggcggt gcccatgacc ccggcctttt ccgcgatgat cgtcacgacg gcgccagcct	1606
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acc caa aaa aag aga tct ctc gag gat ccg aat tcg cgg ccg cgt cga	96
Thr Gln Lys Lys Arg Ser Leu Glu Asp Pro Asn Ser Arg Pro Arg Arg	
16 21 26 31	
cct ttg aca gag tgc aag acg atg act tgc aaa atg tcg cag ctg gaa	144
Pro Leu Thr Glu Cys Lys Thr Met Thr Cys Lys Met Ser Gln Leu Glu	
32 37 42 47	
cgc aac ata gag acc atc atc aac acc ttc cac caa tac tct gtg aag	192
Arg Asn Ile Glu Thr Ile Ile Asn Thr Phe His Gln Tyr Ser Val Lys	
48 53 58 63	
ctg ggg cac cca gac acc ctg aac cag ggg gaa ttc aaa gag ctg gtg	240
Leu Gly His Pro Asp Thr Leu Asn Gln Gly Glu Phe Lys Glu Leu Val	
64 69 74 79	
cga aaa gat ctg caa aat ttt ctc aag aag gag aat aag aat gaa aag	288
Arg Lys Asp Leu Gln Asn Phe Leu Lys Lys Glu Asn Lys Asn Glu Lys	
80 85 90 95	
gtc ata gaa cac atc atg gag gac ctg gac aca aat gca gac aag cag	336
Val Ile Glu His Ile Met Glu Asp Leu Asp Thr Asn Ala Asp Lys Gln	
96 101 106 111	
ctg agc ttc gag gag ttc atc atg ctg atg gcg agg cta acc tgg gcc	384
Leu Ser Phe Glu Glu Phe Ile Met Leu Met Ala Arg Leu Thr Trp Ala	

112	117	122	127	
tcc cac gag aag atg cac gag ggt gac gag ggc cct ggc cac cac cat				432
Ser His Glu Lys Met His Glu Gly Asp Glu Gly Pro Gly His His His				
128	133	138	143	
aag cca ggc ctc ggg gag ggc acc ccc taa g accacagtgg ccaagatcac				483
Lys Pro Gly Leu Gly Glu Gly Thr Pro *				
144	149			
agtggccacg gccacggcca cagtcattggt ggccacggcc acagccacta atcaggaggc				543
caggccaccc tgcctctacc caaccagggc cccggggcct gttatgtcaa actgtcttgg				603
ctgtggggct aggggctggg gccaaataaa gtctcttcct cctaaaaaaaa aagtcgacgc				663
ggccgcgaat tcggatctc gagagatctc tttttttggg tttggtgggg tatcttcac				723
atcgaataga tagttatata catcagccct tcgatgggag agggaacc				771
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gcgggacctg caggagaaag gcgatcctgt ggctgggaat gtgacccac gccagaaga				180
ggaccggta tctcaggtc cgagcccctg gacagcagcc ccaggcccag ctggcc				236
atg gcc ctg tgc ctg aag cag gtg ttc gcc aag gac aag acg ttc cgg				284
Met Ala Leu Cys Leu Lys Gln Val Phe Ala Lys Asp Lys Thr Phe Arg				
1 5 10 15				
ccg cgg aag cgc ttt gag ccg ggc aca cag cgc ttt gag ctg tac aag				332
Pro Arg Lys Arg Phe Glu Pro Gly Thr Gln Arg Phe Glu Leu Tyr Lys				
17 22 27 32				
aag gca cag gcc tct ctc aag tcg ggc ctg gac ctg cgc agt gtg gtg				380
Lys Ala Gln Ala Ser Leu Lys Ser Gly Leu Asp Leu Arg Ser Val Val				
33 38 43 48				
agg cta cca ccc ggg gag aac atc gac gac tgg atc gcc gtg cac gtg				428
Arg Leu Pro Pro Gly Glu Asn Ile Asp Asp Trp Ile Ala Val His Val				
49 54 59 64				
gtg gac ttc ttc aac cgc atc aac ctc atc tac ggc act atg gcg gag				476

Val Asp Phe Phe Asn Arg Ile Asn Leu Ile Tyr Gly Thr Met Ala Glu	
65 70 75 80	
cgc tgc agt gag acc agc tgc ccg gtc atg gcc ggc ggg ccc cgc tac	524
Arg Cys Ser Glu Thr Ser Cys Pro Val Met Ala Gly Gly Pro Arg Tyr	
81 86 91 96	
gag tac cgc tgg cag gac gag cgc cag tac cgg cgg ccc gcc aag ctc	572
Glu Tyr Arg Trp Gln Asp Glu Arg Gln Tyr Arg Arg Pro Ala Lys Leu	
97 102 107 112	
tct gcg ccg cgc tat atg gca ttg ctc atg gac tgg atc gaa ggc ctc	620
Ser Ala Pro Arg Tyr Met Ala Leu Leu Met Asp Trp Ile Glu Gly Leu	
113 118 123 128	
atc aac gac gaa gag gtc ttt ccc acg cgt gtt gga gtt ccc ttc cct	668
Ile Asn Asp Glu Glu Val Phe Pro Thr Arg Val Gly Val Pro Phe Pro	
129 134 139 144	
aag aac ttc cag cag gtc tgc acc aag atc ctg acc cgc ctc ttc cga	716
Lys Asn Phe Gln Gln Val Cys Thr Lys Ile Leu Thr Arg Leu Phe Arg	
145 150 155 160	
gtc ttt gtc cat gtc tac atc cac cac ttc gat agc atc ctc agc atg	764
Val Phe Val His Val Tyr Ile His His Phe Asp Ser Ile Leu Ser Met	
161 166 171 176	
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Gly Ala Glu Ala His Val Asn Thr Cys Tyr Lys His Phe Tyr Tyr Phe	
177 182 187 192	
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Ile Arg Glu Phe Ser Leu Val Asp Gln Arg Glu Leu Glu Pro Leu Arg	
193 198 203 208	
gag atg aca gag cgg atc tgc cac tga gccc ggtctggact tttttggcca	912
Glu Met Thr Glu Arg Ile Cys His *	
209 214	
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atctgaaggc actggaatca ctccacacac ccaaagcctc tggacttctg gttctcagga	1032
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cacaactgtt tctgctttga gcaataattt ctaacctgag gccaacatgt cccactgccc 2472
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<213> Homo sapiens

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ggatcgcggc ccgaatggcg gccgacaagg gcccggcggc tggacctcg tgcgagctg 120
cc  atg gcc cag tgg agg aag aag aaa ggg ctc cgg aag cgc cga ggc 167
    Met Ala Gln Trp Arg Lys Lys Lys Gly Leu Arg Lys Arg Arg Gly
      1                5                10

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gcg gcc tcc cag gcc cgc ggc agc gac tcg gag gac ggc gag ttt gag Ala Ala Ser Gln Ala Arg Gly Ser Asp Ser Glu Asp Gly Glu Phe Glu 16 21 26 31	215
atc cag gcg gaa gat gac gcc cgg gcc cgg aag ctg gga cct gga aga Ile Gln Ala Glu Asp Asp Ala Arg Ala Arg Lys Leu Gly Pro Gly Arg 32 37 42 47	263
ccc ctg ccc acc ttc ccc acc tcg gaa tgc acc tcg gat gtg gag ccg Pro Leu Pro Thr Phe Pro Thr Ser Glu Cys Thr Ser Asp Val Glu Pro 48 53 58 63	311
gac acc cgg gag atg gtg cgt gcc cag aac aag aag aag aag aag tct Asp Thr Arg Glu Met Val Arg Ala Gln Asn Lys Lys Lys Lys Lys Ser 64 69 74 79	359
gga ggc ttc cag tcc atg ggc ctg agc tac ccg gtg ttc aaa ggc atc Gly Gly Phe Gln Ser Met Gly Leu Ser Tyr Pro Val Phe Lys Gly Ile 80 85 90 95	407
atg aag aag ggg tac aag gtg cca aca ccc atc cag agg aag acc atc Met Lys Lys Gly Tyr Lys Val Pro Thr Pro Ile Gln Arg Lys Thr Ile 96 101 106 111	455
ccg gtg atc ttg gat ggc aag gac gtg gtg gcc atg gcc cgg acg ggc Pro Val Ile Leu Asp Gly Lys Asp Val Val Ala Met Ala Arg Thr Gly 112 117 122 127	503
agt ggc aag aca gcc tgc ttc ctc ctc cca atg ttc gag cgg ctc aag Ser Gly Lys Thr Ala Cys Phe Leu Leu Pro Met Phe Glu Arg Leu Lys 128 133 138 143	551
acc cac agt gcc cag acc ggg gcc cgc gcc ctc atc ctc tcg ccg acc Thr His Ser Ala Gln Thr Gly Ala Arg Ala Leu Ile Leu Ser Pro Thr 144 149 154 159	599
cga gag ctg gcc ctg cag acc ctg aag ttc act aag gag cta ggc aag Arg Glu Leu Ala Leu Gln Thr Leu Lys Phe Thr Lys Glu Leu Gly Lys 160 165 170 175	647
ttc act ggc ctc aag act gcc ctg atc ctg ggt gga gac agg atg gaa Phe Thr Gly Leu Lys Thr Ala Leu Ile Leu Gly Gly Asp Arg Met Glu 176 181 186 191	695
gac cag ttt gca gcc ctg cac gaa aat ccc gac ata att att gcc acg Asp Gln Phe Ala Ala Leu His Glu Asn Pro Asp Ile Ile Ile Ala Thr 192 197 202 207	743
ccc gga cgg ttg gtg cat gtg gct gtg gaa atg agc ctg aag ctg cag Pro Gly Arg Leu Val His Val Ala Val Glu Met Ser Leu Lys Leu Gln 208 213 218 223	791
agt gtg gaa tac gtg gtg ttc gat gaa gct gac cgg ctt ttt gaa atg Ser Val Glu Tyr Val Val Phe Asp Glu Ala Asp Arg Leu Phe Glu Met 224 229 234 239	839
ggt ttc gca gag cag ctg cag gag atc aac gcc cgc ctc ccc ggg ggc	887

Gly	Phe	Ala	Glu	Gln	Leu	Gln	Glu	Ile	Asn	Ala	Arg	Leu	Pro	Gly	Gly		
240					245					250					255		
cac	cag	acg	gtg	ctg	ttc	tcc	gcc	acg	ctg	ccc	aaa	ctg	ctg	gtg	gaa	935	
His	Gln	Thr	Val	Leu	Phe	Ser	Ala	Thr	Leu	Pro	Lys	Leu	Leu	Val	Glu		
256					261					266					271		
ttt	gcc	cgg	gct	ggc	ctc	acg	gag	ccc	gtg	ctc	atc	cgg	ctt	gac	gtg	983	
Phe	Ala	Arg	Ala	Gly	Leu	Thr	Glu	Pro	Val	Leu	Ile	Arg	Leu	Asp	Val		
272					277					282					287		
gat	acc	aag	ctc	aac	gag	cag	ctg	aag	acc	tcc	ttc	ttc	ctc	gtg	cgg	1031	
Asp	Thr	Lys	Leu	Asn	Glu	Gln	Leu	Lys	Thr	Ser	Phe	Phe	Leu	Val	Arg		
288					293					298					303		
gag	gac	acc	aag	gct	gcc	gtg	ctg	ctc	cac	ctg	ctg	cac	aac	gtg	gtg	1079	
Glu	Asp	Thr	Lys	Ala	Ala	Val	Leu	Leu	His	Leu	Leu	His	Asn	Val	Val		
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cgg	ccc	cag	gac	cag	acc	gtg	gtg	ttt	gtg	gcc	acg	aag	cac	cac	gcc	1127	
Arg	Pro	Gln	Asp	Gln	Thr	Val	Val	Phe	Val	Ala	Thr	Lys	His	His	Ala		
320					325					330					335		
gag	tac	ctc	act	gag	ctg	ctg	acg	acc	cag	cgg	gtg	agc	tgc	gcc	cac	1175	
Glu	Tyr	Leu	Thr	Glu	Leu	Leu	Thr	Thr	Gln	Arg	Val	Ser	Cys	Ala	His		
336					341					346					351		
atc	tac	agt	gcc	cta	gac	cgc	aca	gcc	cgc	aag	atc	aat	ctc	gcc	aaa	1223	
Ile	Tyr	Ser	Ala	Leu	Asp	Pro	Thr	Ala	Arg	Lys	Ile	Asn	Leu	Ala	Lys		
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ttc	acg	ctt	ggc	aag	tgc	tcc	act	ctc	att	gtg	act	gac	ctg	gcc	gcc	1271	
Phe	Thr	Leu	Gly	Lys	Cys	Ser	Thr	Leu	Ile	Val	Thr	Asp	Leu	Ala	Ala		
368					373					378					383		
cga	ggc	ctg	gac	atc	ccg	ctg	ctg	gac	aat	gtc	atc	aac	tac	agc	ttc	1319	
Arg	Gly	Leu	Asp	Ile	Pro	Leu	Leu	Asp	Asn	Val	Ile	Asn	Tyr	Ser	Phe		
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ccc	gcc	aag	ggc	aaa	ctc	ttc	ctg	cac	cgc	gtg	ggc	cgt	gtg	gct	cgg	1367	
Pro	Ala	Lys	Gly	Lys	Leu	Phe	Leu	His	Arg	Val	Gly	Arg	Val	Ala	Arg		
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Ala	Gly	Arg	Ser	Gly	Thr	Ala	Tyr	Ser	Leu	Val	Ala	Pro	Asp	Glu	Ile		
416					421					426					431		
ccc	tac	ctg	ctg	gat	ctg	cac	ctg	ttc	ctg	ggc	cgc	tcc	ctc	acc	ctc	1463	
Pro	Tyr	Leu	Leu	Asp	Leu	His	Leu	Phe	Leu	Gly	Arg	Ser	Leu	Thr	Leu		
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gcc	cga	ccc	ctc	aag	gag	ccc	tca	ggt	gtg	gcc	ggt	gtg	gat	ggc	atg	1511	
Ala	Arg	Pro	Leu	Lys	Glu	Pro	Ser	Gly	Val	Ala	Gly	Val	Asp	Gly	Met		
448					453					458					463		
ctg	ggt	cgg	gtg	cca	cag	agt	gtg	gtg	gac	gag	gag	gac	agt	ggt	ctg	1559	
Leu	Gly	Arg	Val	Pro	Gln	Ser	Val	Val	Asp	Glu	Glu	Asp	Ser	Gly	Leu		

464	469	474	479	
cag agc acc ctg gag gca tcg ctg gag cta cgg ggc ctg gcc cgc gtt				1607
Gln Ser Thr Leu Glu Ala Ser Leu Glu Leu Arg Gly Leu Ala Arg Val				
480	485	490	495	
gct gat aac gcc cag cag cag tat gtg cgc tca cgc ccg gcg ccc tcg				1655
Ala Asp Asn Ala Gln Gln Gln Tyr Val Arg Ser Arg Pro Ala Pro Ser				
496	501	506	511	
cct gag tcc atc aag agg gcc aag gag atg gac ctt gtg ggg ctg ggc				1703
Pro Glu Ser Ile Lys Arg Ala Lys Glu Met Asp Leu Val Gly Leu Gly				
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ctg cac ccc ctc ttc agc tcg cgt ttt gag gag gag gag ctg cag cgg				1751
Leu His Pro Leu Phe Ser Ser Arg Phe Glu Glu Glu Glu Leu Gln Arg				
528	533	538	543	
ctg agg ctg gtg gac agc ata aag aac tac cgc tcc cgg gcg gac att				1799
Leu Arg Leu Val Asp Ser Ile Lys Asn Tyr Arg Ser Arg Ala Asp Ile				
544	549	554	559	
ttc tca gag gtc gtg ggc cgg aag cgg cag cgg tca gga ccc aac agg				1847
Phe Ser Glu Val Val Gly Arg Lys Arg Gln Arg Ser Gly Pro Asn Arg				
560	565	570	575	
gga gcc aag agg cgg agg gag gag gcc cgg cag cgg gac cag gaa ttc				1895
Gly Ala Lys Arg Arg Arg Glu Glu Ala Arg Gln Arg Asp Gln Glu Phe				
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Tyr Ile Pro Tyr Arg Pro Lys Asp Phe Asp Ser Glu Arg Gly Leu Ser				
592	597	602	607	
atc agc ggg gaa ggg gga gcc ttt gag cag cag gca gct ggc gct gtc				1991
Ile Ser Gly Glu Gly Gly Ala Phe Glu Gln Gln Ala Ala Gly Ala Val				
608	613	618	623	
ctg gac ttg atg ggg gat gaa gcc cag aac ctg acg agg ggc cgg cag				2039
Leu Asp Leu Met Gly Asp Glu Ala Gln Asn Leu Thr Arg Gly Arg Gln				
624	629	634	639	
cag ctc aag tgg gac cgt aag aag aag cgg ttt gtg gga cag tca gga				2087
Gln Leu Lys Trp Asp Arg Lys Lys Lys Arg Phe Val Gly Gln Ser Gly				
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cag gaa gac aag aag aag att aag aca gag agc ggc cgc tac atc agc				2135
Gln Glu Asp Lys Lys Lys Ile Lys Thr Glu Ser Gly Arg Tyr Ile Ser				
656	661	666	671	
agc tcc tac aag cga gac ctc tat cag aag tgg aaa cag aaa cag aaa				2183
Ser Ser Tyr Lys Arg Asp Leu Tyr Gln Lys Trp Lys Gln Lys Gln Lys				
672	677	682	687	
att gat gat cgt gac tcg gac gaa gaa ggg gca tct gac cgg cga ggc				2231
Ile Asp Asp Arg Asp Ser Asp Glu Glu Gly Ala Ser Asp Arg Arg Gly				
688	693	698	703	

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Pro Glu Arg Arg Gly Gly Lys Arg Asp Arg Gly Gln Ala Gly Ala Ser	
704 709 714 719	
cgg ccc cac gcc cca ggc acc cct gca ggc cga gtc cgc ccg gaa ctc	2327
Arg Pro His Ala Pro Gly Thr Pro Ala Gly Arg Val Arg Pro Glu Leu	
720 725 730 735	
aag acc aag cag cag atc ctg aag cag cgg cgc cgg gcc cag aag ctg	2375
Lys Thr Lys Gln Gln Ile Leu Lys Gln Arg Arg Arg Ala Gln Lys Leu	
736 741 746 751	
cac ttc ctg cag cgt ggt ggc ctc aag cag ctc tct gcc cgc aac cgc	2423
His Phe Leu Gln Arg Gly Gly Leu Lys Gln Leu Ser Ala Arg Asn Arg	
752 757 762 767	
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Arg Arg Val Gln Glu Leu Gln Gln Gly Ala Phe Gly Arg Gly Ala Arg	
768 773 778 783	
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Ser Lys Lys Gly Lys Met Arg Lys Arg Met *	
784 789 794	
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Ala Gly Ala Ala Pro Met Gly Pro Gln Tyr Cys Val Cys Lys Val Glu	
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Leu Ser Val Ser Gly Gln Asn Leu Leu Asp Arg Asp Val Thr Ser Lys	
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Phe Gly Lys Ser Asp Pro Phe Leu Glu Phe Tyr Lys Pro Gly Asp Asp	
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Gly Lys Trp Met Leu Val His Arg Thr Glu Val Ile Lys Tyr Thr Leu	
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Pro Lys Lys Gln Arg Lys Lys Lys Asn Tyr Lys Asn Ser Gly Ile Ile				
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Ile Leu Arg Ser Cys Lys Ile Asn Arg Asp Tyr Ser Phe Leu Asp Tyr				
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Ala Ser Asn Gly Asn Pro Leu Asp Pro Ser Ser Leu His Tyr Ile Asn				
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Pro Met Gly Thr Asn Glu Tyr Leu Ser Ala Ile Trp Ala Val Gly Gln				
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Ile Ile Gln Asp Tyr Asp Ser Asp Lys Met Phe Pro Ala Leu Gly Phe				
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Asn Phe Asn Pro Thr Asn Pro Phe Cys Ser Gly Val Asp Gly Ile Ala				
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Gln Ala Tyr Ser Ala Cys Leu Pro His Ile Arg Phe Tyr Gly Pro Thr				
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Thr Gln Gln Arg Thr Ala Thr Gln Tyr Phe Ile Leu Leu Ile Ile Thr				
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	Met Leu Phe Pro Tyr Ser Cys
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Phe Leu His Cys Cys Ala Leu Gly Gly Arg Ser Ser Gly Gly His Leu	

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Val Ser Leu Gln Arg Arg Ala Arg Leu Leu Gly Pro Glu Thr Pro Arg				
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Arg Arg Pro Ala Arg Ser Ser Arg His Ser Pro Asn Lys His Leu Pro				
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Arg Ala Ser Gly Ala Arg Ala Gly Ala Ala Gly Arg Ala Arg Pro Arg				
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ggg agg gaa ttc aac tcg gac aaa agt ccg gga agc gcc cgc ccc gcc				6893
Gly Arg Glu Phe Asn Ser Asp Lys Ser Pro Gly Ser Ala Arg Pro Ala				
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cgg gtc ttc tcc acg ggg cgc gcc cga ccg gca cct ccc tcc gag cgc				6941
Arg Val Phe Ser Thr Gly Arg Ala Arg Pro Ala Pro Pro Ser Glu Arg				
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Gly His Pro Leu Gly Leu Pro Gln Leu Ser Gln Pro Gly His Val Gly				
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ctc gcc cgg tcg ccc gcc cgt cag cag cac ccg tgg cct ccc ggc gtc				7037
Leu Ala Arg Ser Pro Ala Arg Gln Gln His Pro Trp Pro Pro Gly Val				
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Ser Ser Glu Ala Gly Phe Ala Thr *				
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 gccagcgcag cctcagagtt tgattatttg ca atg tca ggc ttt gaa aac tta 173
 Met Ser Gly Phe Glu Asn Leu
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 aac acg gat ttc tac cag aca agt tac agc atc gat gat cag tca cag 221
 Asn Thr Asp Phe Tyr Gln Thr Ser Tyr Ser Ile Asp Asp Gln Ser Gln
 8 13 18 23
 cag tcc tat gat tat gga gga agt gga gga ccc tat agc aaa cag tat 269
 Gln Ser Tyr Asp Tyr Gly Gly Ser Gly Gly Pro Tyr Ser Lys Gln Tyr
 24 29 34 39
 gct ggc tat gac tat tcg cag caa ggc aga ttt gtc cct cca gac atg 317
 Ala Gly Tyr Asp Tyr Ser Gln Gln Gly Arg Phe Val Pro Pro Asp Met
 40 45 50 55
 atg cag cca caa cag cca tac acc ggg cag att tac cag cca act cag 365
 Met Gln Pro Gln Gln Pro Tyr Thr Gly Gln Ile Tyr Gln Pro Thr Gln
 56 61 66 71
 gca tat act cca gct tca cct cag cct ttc tat gga aac aac ttt gag 413

Ala Tyr Thr Pro Ala Ser Pro Gln Pro Phe Tyr Gly Asn Asn Phe Glu	
72 77 82 87	
gat gag cca cct tta tta gaa gag tta ggt atc aat ttt gac cac atc	461
Asp Glu Pro Pro Leu Leu Glu Glu Leu Gly Ile Asn Phe Asp His Ile	
88 93 98 103	
tgg caa aaa aca cta aca gta tta cat ccg tta aaa gta gca gat ggc	509
Trp Gln Lys Thr Leu Thr Val Leu His Pro Leu Lys Val Ala Asp Gly	
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Ser Ile Met Asn Glu Thr Asp Leu Ala Gly Pro Met Val Phe Cys Leu	
120 125 130 135	
gct ttt gga gcc aca ttg cta ctg gct ggc aaa atc cag ttt ggc tat	605
Ala Phe Gly Ala Thr Leu Leu Leu Ala Gly Lys Ile Gln Phe Gly Tyr	
136 141 146 151	
gta tac ggg atc agt gca att gga tgt cta gga atg ttt tgt tta tta	653
Val Tyr Gly Ile Ser Ala Ile Gly Cys Leu Gly Met Phe Cys Leu Leu	
152 157 162 167	
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Asn Leu Met Ser Met Thr Gly Val Ser Phe Gly Cys Val Ala Ser Val	
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Leu Gly Tyr Cys Leu Leu Pro Met Ile Leu Leu Ser Ser Phe Ala Val	
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Ile Phe Ser Leu Gln Gly Met Val Gly Ile Ile Leu Thr Ala Gly Ile	
200 205 210 215	
att gga tgg tgt agt ttt tct gct tcc aaa ata ttt att tct gca tta	845
Ile Gly Trp Cys Ser Phe Ser Ala Ser Lys Ile Phe Ile Ser Ala Leu	
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Ala Met Glu Gly Gln Gln Leu Leu Val Ala Tyr Pro Cys Ala Leu Leu	
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Tyr Gly Val Phe Ala Leu Ile Ser Val Phe *	
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ctggtggtcc ggttatggga taagaagcct cgtgggagag cagaggacgc tggacgatcc 180
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actgttccag gcacgattct gccttctctc aaatggcata actcaggact ctgcaaattc 420
ccagaaacag gaggaaaa atg acc aca ttc aag gag gga ctg acc ttc aag 471
          Met Thr Thr Phe Lys Glu Gly Leu Thr Phe Lys
          1                      5

gat gtg gct gtg gtc ttc act gag gag gag ctg ggg ctg ctg gac cct 519
Asp Val Ala Val Val Phe Thr Glu Glu Glu Leu Gly Leu Leu Asp Pro
12                      17                      22                      27

gtc cag agg aat ctg tac caa gat gtg atg ctg gag aac ttc agg aac 567
Val Gln Arg Asn Leu Tyr Gln Asp Val Met Leu Glu Asn Phe Arg Asn
28                      33                      38                      43

ctg ctg tca gtg ggg cat cac ccc ttc aaa cat gat gta ttc ctt tta 615
Leu Leu Ser Val Gly His His Pro Phe Lys His Asp Val Phe Leu Leu
44                      49                      54                      59

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gaa aag gaa aaa aag ctt gat ata atg aag aca gca act caa aga aaa Glu Lys Glu Lys Lys Leu Asp Ile Met Lys Thr Ala Thr Gln Arg Lys 60 65 70 75	663
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gca gga cga cat gaa gag ctt tac tgg ggg caa atc tgg aaa cag att Ala Gly Arg His Glu Glu Leu Tyr Trp Gly Gln Ile Trp Lys Gln Ile 92 97 102 107	759
gca agt gat tta atc aag tat gaa gac tct atg ata agt att tct cgg Ala Ser Asp Leu Ile Lys Tyr Glu Asp Ser Met Ile Ser Ile Ser Arg 108 113 118 123	807
ttc ccc aga caa ggt gat ttg tcc tgc cag gtt agg gca gga cta tat Phe Pro Arg Gln Gly Asp Leu Ser Cys Gln Val Arg Ala Gly Leu Tyr 124 129 134 139	855
aca act cac aca gga cag aaa ttt tac caa tgt gat gag tac aaa aaa Thr Thr His Thr Gly Gln Lys Phe Tyr Gln Cys Asp Glu Tyr Lys Lys 140 145 150 155	903
tcc ttc act gat gtc ttc aac ttt gat ctt cat caa cag tta cac tca Ser Phe Thr Asp Val Phe Asn Phe Asp Leu His Gln Gln Leu His Ser 156 161 166 171	951
gga gag aag tct cat aca tgt gat gag tgt gga aaa agc ttc tgt tac Gly Glu Lys Ser His Thr Cys Asp Glu Cys Gly Lys Ser Phe Cys Tyr 172 177 182 187	999
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tat aag tgt gac gtg tgt ggt aag gaa ttt agt cag agc tca cat ctt Tyr Lys Cys Asp Val Cys Gly Lys Glu Phe Ser Gln Ser Ser His Leu 204 209 214 219	1095
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ggg gag aaa cca ttc aaa tgt gat aca tgt ggt aag aac ttc cgt cgt	1335

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Arg	Ser	Ala	Leu	Asn	Asn	His	Cys	Met	Val	His	Thr	Gly	Glu	Lys	Pro	
300					305					310					315	
tac	aaa	tgt	gag	gac	tgt	ggg	aag	tgt	ttc	act	tgt	agc	tca	aac	ctt	1431
Tyr	Lys	Cys	Glu	Asp	Cys	Gly	Lys	Cys	Phe	Thr	Cys	Ser	Ser	Asn	Leu	
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cgt	atc	cat	caa	agg	gtc	cac	aca	gga	gag	aaa	cct	tac	aag	tgt	gaa	1479
Arg	Ile	His	Gln	Arg	Val	His	Thr	Gly	Glu	Lys	Pro	Tyr	Lys	Cys	Glu	
332					337					342					347	
gaa	tgt	ggg	aag	tgc	ttt	att	cag	cct	tca	caa	ttt	cag	gcc	cat	cgg	1527
Glu	Cys	Gly	Lys	Cys	Phe	Ile	Gln	Pro	Ser	Gln	Phe	Gln	Ala	His	Arg	
348					353					358					363	
aga	atc	cac	act	gga	gag	aaa	cca	tac	gta	tgt	aaa	gtg	tgt	ggg	aag	1575
Arg	Ile	His	Thr	Gly	Glu	Lys	Pro	Tyr	Val	Cys	Lys	Val	Cys	Gly	Lys	
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Gly	Phe	Ile	Tyr	Ser	Ser	Ser	Phe	Gln	Ala	His	Gln	Gly	Val	His	Thr	
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gga	gag	aag	cca	tac	aaa	tgc	aat	gag	tgt	ggg	aag	agc	ttc	aga	atg	1671
Gly	Glu	Lys	Pro	Tyr	Lys	Cys	Asn	Glu	Cys	Gly	Lys	Ser	Phe	Arg	Met	
396					401					406					411	
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Lys	Ile	His	Tyr	Gln	Val	His	Leu	Val	Val	His	Thr	Gly	Glu	Lys	Pro	
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Tyr	Lys	Cys	Glu	Val	Cys	Gly	Lys	Ala	Phe	Arg	Gln	Ser	Ser	Tyr	Leu	
428					433					438					443	
aaa	atc	cat	ctg	aaa	gca	cat	agt	gta	cag	aaa	cct	ttt	aag	tgt	gaa	1815
Lys	Ile	His	Leu	Lys	Ala	His	Ser	Val	Gln	Lys	Pro	Phe	Lys	Cys	Glu	
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Glu	Cys	Gly	Gln	Gly	Phe	Asn	Gln	Ser	Ser	Arg	Leu	Gln	Ile	His	Gln	
460					465					470					475	
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Leu	Ile	His	Thr	Gly	Glu	Lys	Pro	Tyr	Lys	Cys	Glu	Glu	Cys	Gly	Lys	
476					481					486					491	
gga	ttt	agt	cgt	aga	gca	gat	ctt	aaa	att	cat	tgt	agg	atc	cac	aca	1959
Gly	Phe	Ser	Arg	Arg	Ala	Asp	Leu	Lys	Ile	His	Cys	Arg	Ile	His	Thr	
492					497					502					507	
ggg	gag	aaa	cca	tat	aat	tgt	gag	gag	tgt	ggg	aag	gtc	ttc	agt	cag	2007
Gly	Glu	Lys	Pro	Tyr	Asn	Cys	Glu	Glu	Cys	Gly	Lys	Val	Phe	Ser	Gln	

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Ala Ser His Leu Leu Thr His Gln Arg Val His Ser Gly Glu Lys Pro				
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ttt aaa tgt gaa gag tgt ggg aag agc ttc agt cgg agt gca cac ctt				2103
Phe Lys Cys Glu Glu Cys Gly Lys Ser Phe Ser Arg Ser Ala His Leu				
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caa gcc cat caa aaa gtc cac act gga gaa aag cca tac aaa tgt ggg				2151
Gln Ala His Gln Lys Val His Thr Gly Glu Lys Pro Tyr Lys Cys Gly				
556	561	566	571	
gag tgt gga aag ggc ttc aag tgg agc ttg aac ctt gac atg cat cag				2199
Glu Cys Gly Lys Gly Phe Lys Trp Ser Leu Asn Leu Asp Met His Gln				
572	577	582	587	
agg gtg cac aca gga gaa aaa ccc tat aca tgt ggg gag tgt ggg aag				2247
Arg Val His Thr Gly Glu Lys Pro Tyr Thr Cys Gly Glu Cys Gly Lys				
588	593	598	603	
cac ttc agt cag gcc tca agt ctc caa ctt cat cag agt gtc cac aca				2295
His Phe Ser Gln Ala Ser Ser Leu Gln Leu His Gln Ser Val His Thr				
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gga gag aaa cca tac aaa tgt gat gta tgt ggt aaa gtc ttc agt cgg				2343
Gly Glu Lys Pro Tyr Lys Cys Asp Val Cys Gly Lys Val Phe Ser Arg				
620	625	630	635	
tct tca caa tta cag tat cat agg cga gtt cac act ggg gaa aaa cct				2391
Ser Ser Gln Leu Gln Tyr His Arg Arg Val His Thr Gly Glu Lys Pro				
636	641	646	651	
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Tyr Lys Cys Glu Ile Cys Gly Lys Arg Phe Ser Trp Arg Ser Asn Leu				
652	657	662	667	
gta agt cat cac aaa att cat gct gct ggt aca ttt tat gaa aat gat				2487
Val Ser His His Lys Ile His Ala Ala Gly Thr Phe Tyr Glu Asn Asp				
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Arg *				
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Pro Lys Arg Arg Ser Ala Arg Leu Ser Ala Lys Pro Pro Ala Lys Val
17 22 27 32

gaa gcg aag ccg aaa aag gca gca gcg aag gat aaa tct tca gac aaa 144
Glu Ala Lys Pro Lys Lys Ala Ala Ala Lys Asp Lys Ser Ser Asp Lys
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Lys Val Gln Thr Lys Gly Lys Arg Gly Ala Lys Gly Lys Gln Ala Glu
49 54 59 64

gtg gct aac caa gaa act aaa gaa gac tta cct gcg gaa aac ggg gaa 240
Val Ala Asn Gln Glu Thr Lys Glu Asp Leu Pro Ala Glu Asn Gly Glu
65 70 75 80

acg aag act gag gag gag aca cca gca ggg caa aag aga gcc tgg agt 288
Thr Lys Thr Glu Glu Glu Thr Pro Ala Gly Gln Lys Arg Ala Trp Ser
81 86 91 96

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Ile Ser Pro Leu Leu Glu Leu Cys Arg Gln Trp Leu His Gly Cys Gly
97 102 107 112

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Ser Gln Trp Thr Ser Ser Ala Ser Asp Leu Val Thr Gln Leu Ser Gly
113 118 123 128

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129 134 139 144

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Gln Pro Gln Leu Arg Ala Ala Pro Pro Thr Arg Thr Pro Ser Ala Lys
145 150 155 160

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Arg Cys Ile Leu Cys Asn Phe Leu Pro Gly Cys Trp Leu Val Gly Asp
161 166 171 176

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Val Ala Gly Ser Arg Gln Pro Ser Ala Pro Gln Thr Leu Arg Gln Arg
177 182 187 192

cag cat acg agg ccc ccg ccc cag gag cgc ggg tcc ggg cgg cgt tcc 624
Gln His Thr Arg Pro Pro Pro Gln Glu Arg Gly Ser Gly Arg Arg Ser

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cct ctg cgg gag gcg cgg cga gcc aat cct cac ttt aaa agc ttt cct				672
Pro Leu Arg Glu Ala Arg Arg Ala Asn Pro His Phe Lys Ser Phe Pro				
209	214	219	224	
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Thr Leu Pro Asn Pro Arg Leu Gly Ala Pro Ala Val Pro Arg Arg Gly				
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Pro Arg Ala Val Leu Pro Tyr Arg Pro Val Pro Ile Gly Gly Pro Val				
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Ser Glu Ser Gly Pro Gly Ala Gly Ala Gly Ala Gly Ala Val Pro Val				
289	294	299	304	
gtt gcc gaa gag att gga ctg gga ggg caa cga gca caa cag gag cta				960
Val Ala Glu Glu Ile Gly Leu Gly Gly Gln Arg Ala Gln Gln Glu Leu				
305	310	315	320	
cga gga gtt gcc tta gga ggg cca cta cag tgc att tct tcc agg gct				1008
Arg Gly Val Ala Leu Gly Gly Pro Leu Gln Cys Ile Ser Ser Arg Ala				
321	326	331	336	
gcc ctg gct tta gtg ttt ggg ccc tat gca gtt ggt gaa ggc cta tgg				1056
Ala Leu Ala Leu Val Phe Gly Pro Tyr Ala Val Gly Glu Gly Leu Trp				
337	342	347	352	
gaa aaa att gtg gtc ttg tcc aat aag cat gtg gct cct gat cat ctt				1104
Glu Lys Ile Val Val Leu Ser Asn Lys His Val Ala Pro Asp His Leu				
353	358	363	368	
ttg caa atc tgc cag cgc atc ggt cct atg ttg gat aaa gaa att cca				1152
Leu Gln Ile Cys Gln Arg Ile Gly Pro Met Leu Asp Lys Glu Ile Pro				
369	374	379	384	
ccc agt att tca aga gtc act tct tta ctt ggt gca gga agg cag tct				1200
Pro Ser Ile Ser Arg Val Thr Ser Leu Leu Gly Ala Gly Arg Gln Ser				
385	390	395	400	
ttg cta cgt aca gca aaa gac tgc agg cac aca gtt tgg aag ggc tct				1248
Leu Leu Arg Thr Ala Lys Asp Cys Arg His Thr Val Trp Lys Gly Ser				
401	406	411	416	
gcc ttt gct gct ctt cat aga gga aga cct cct gaa atg cca gtg aat				1296
Ala Phe Ala Ala Leu His Arg Gly Arg Pro Pro Glu Met Pro Val Asn				
417	422	427	432	

tat ggt tcc cca cca aat ctt gtg gag ata cat cga gga aaa caa ctc	1344
Tyr Gly Ser Pro Pro Asn Leu Val Glu Ile His Arg Gly Lys Gln Leu	
433 438 443 448	
aca ggg tgt tcc act ttt agt aca gca ttt cca gga act atg tat cag	1392
Thr Gly Cys Ser Thr Phe Ser Thr Ala Phe Pro Gly Thr Met Tyr Gln	
449 454 459 464	
cat ata aaa atg cac aga agg att ctc gga cat cta tct gct gtt tac	1440
His Ile Lys Met His Arg Arg Ile Leu Gly His Leu Ser Ala Val Tyr	
465 470 475 480	
tgt gta gca ttt gat agg aca gga cat aga atc ttt aca ggt tca gat	1488
Cys Val Ala Phe Asp Arg Thr Gly His Arg Ile Phe Thr Gly Ser Asp	
481 486 491 496	
gac tgt ttg gta aag att tgg tca aca cat aat ggc cgc ttg tta tct	1536
Asp Cys Leu Val Lys Ile Trp Ser Thr His Asn Gly Arg Leu Leu Ser	
497 502 507 512	
aca tta aga ggt cat tct gca gaa att tca gat atg gca gta aac tat	1584
Thr Leu Arg Gly His Ser Ala Glu Ile Ser Asp Met Ala Val Asn Tyr	
513 518 523 528	
gag aat aca atg att gct gcg ggg agc tgt gat aaa att att aga gtg	1632
Glu Asn Thr Met Ile Ala Ala Gly Ser Cys Asp Lys Ile Ile Arg Val	
529 534 539 544	
tgg tgc ttg aga act tgt gcc cca gtt gct gtg ctc caa gga cac aca	1680
Trp Cys Leu Arg Thr Cys Ala Pro Val Ala Val Leu Gln Gly His Thr	
545 550 555 560	
gga tca att aca tct tta cag ttt agc ccg atg gcc aaa ggc tct caa	1728
Gly Ser Ile Thr Ser Leu Gln Phe Ser Pro Met Ala Lys Gly Ser Gln	
561 566 571 576	
aga tac atg gtt tcc act ggt gct gat ggg aca gtt tgc ttt tgg caa	1776
Arg Tyr Met Val Ser Thr Gly Ala Asp Gly Thr Val Cys Phe Trp Gln	
577 582 587 592	
tgg gat tta gaa tcc tta aaa ttt agg ttc cta agt ggt agc aga gat	1824
Trp Asp Leu Glu Ser Leu Lys Phe Arg Phe Leu Ser Gly Ser Arg Asp	
593 598 603 608	
gga aca gca cgg att tgg aga ttt gag cag tta gaa tgg agg agc att	1872
Gly Thr Ala Arg Ile Trp Arg Phe Glu Gln Leu Glu Trp Arg Ser Ile	
609 614 619 624	
tta ttg gat atg gct acc aga atc tca ggg gac tta tct tcc gaa gag	1920
Leu Leu Asp Met Ala Thr Arg Ile Ser Gly Asp Leu Ser Ser Glu Glu	
625 630 635 640	
gaa agg ttt atg aaa cct aaa gta aca atg ata gct tgg aat caa aat	1968
Glu Arg Phe Met Lys Pro Lys Val Thr Met Ile Ala Trp Asn Gln Asn	
641 646 651 656	

gat agc att gtt gtc aca gct gtg aat gat cat gtc ctc aaa gtg tgg	2016
Asp Ser Ile Val Val Thr Ala Val Asn Asp His Val Leu Lys Val Trp	
657 662 667 672	
aat tct tac act gga caa ctg ctt cat aac tta atg gga cat gct gat	2064
Asn Ser Tyr Thr Gly Gln Leu Leu His Asn Leu Met Gly His Ala Asp	
673 678 683 688	
gaa gta ttt gtt ctg gag aca cat ccc ttt gat tcc aga att atg tta	2112
Glu Val Phe Val Leu Glu Thr His Pro Phe Asp Ser Arg Ile Met Leu	
689 694 699 704	
tct gca gga cat gat ggc agc ata ttt ata tgg gat att aca aaa ggt	2160
Ser Ala Gly His Asp Gly Ser Ile Phe Ile Trp Asp Ile Thr Lys Gly	
705 710 715 720	
acc aag atg aaa cat tat ttt aat atg att gaa gga caa gga cat gga	2208
Thr Lys Met Lys His Tyr Phe Asn Met Ile Glu Gly Gln Gly His Gly	
721 726 731 736	
gct gtg ttt gac tgt aag ttt tca cag gat gga cag cat ttt gcc tgt	2256
Ala Val Phe Asp Cys Lys Phe Ser Gln Asp Gly Gln His Phe Ala Cys	
737 742 747 752	
aca gat tct cat ggg cac ctt ctg ata ttt ggt ttt gga tgc agc aaa	2304
Thr Asp Ser His Gly His Leu Leu Ile Phe Gly Phe Gly Cys Ser Lys	
753 758 763 768	
cca tat gaa aag att cct gat cag atg ttc ttc cat act gac tat cga	2352
Pro Tyr Glu Lys Ile Pro Asp Gln Met Phe Phe His Thr Asp Tyr Arg	
769 774 779 784	
cca ctt att aga gat tct aat aat tat gtc tta gat gag caa act cag	2400
Pro Leu Ile Arg Asp Ser Asn Asn Tyr Val Leu Asp Glu Gln Thr Gln	
785 790 795 800	
cag gct cct cat ctt atg cct cca cca ttc ttg gta gat gta gat gga	2448
Gln Ala Pro His Leu Met Pro Pro Pro Phe Leu Val Asp Val Asp Gly	
801 806 811 816	
aat cct cat cca acc aag tat cag aga tta gta cca ggc cga gaa aat	2496
Asn Pro His Pro Thr Lys Tyr Gln Arg Leu Val Pro Gly Arg Glu Asn	
817 822 827 832	
tct gca gat gaa cat ttg att cca cag ctg ggc tat gtg gca aca agt	2544
Ser Ala Asp Glu His Leu Ile Pro Gln Leu Gly Tyr Val Ala Thr Ser	
833 838 843 848	
gat gga gag gtg att gaa caa att ata agc ctg caa acc aat gat aat	2592
Asp Gly Glu Val Ile Glu Gln Ile Ile Ser Leu Gln Thr Asn Asp Asn	
849 854 859 864	
gat gaa cgc agc cca gaa tcg agt att ctt gat gga atg ata aga cag	2640
Asp Glu Arg Ser Pro Glu Ser Ser Ile Leu Asp Gly Met Ile Arg Gln	
865 870 875 880	
ttg cag cag cag caa gat cag aga atg gga gca gat cag gat act att	2688

Leu Gln Gln Gln Gln Asp Gln Arg Met Gly Ala Asp Gln Asp Thr Ile	
881 886 891 896	
cca aga gga ctt tca aat ggt gaa gaa aca ccc cgg aga ggt ttt aga	2736
Pro Arg Gly Leu Ser Asn Gly Glu Glu Thr Pro Arg Arg Gly Phe Arg	
897 902 907 912	
agg ctg agc tta gac att cag tcc cct cca aat att ggt ctg cgt cgt	2784
Arg Leu Ser Leu Asp Ile Gln Ser Pro Pro Asn Ile Gly Leu Arg Arg	
913 918 923 928	
agt gga caa gtt gaa ggt gtt cgt cag atg cat caa aac gct cca cgc	2832
Ser Gly Gln Val Glu Gly Val Arg Gln Met His Gln Asn Ala Pro Arg	
929 934 939 944	
agt cag att gct aca gaa cgt gac ctg cag gct tgg aaa cga aga gtg	2880
Ser Gln Ile Ala Thr Glu Arg Asp Leu Gln Ala Trp Lys Arg Arg Val	
945 950 955 960	
gtt gta cca gag gta ggt tct gat gtc tgt tgt tcc ctt ctg tac tca	2928
Val Val Pro Glu Val Gly Ser Asp Val Cys Cys Ser Leu Leu Tyr Ser	
961 966 971 976	
atg ctt ggc tct cac ttt cgg att cag tgg ttt tgg tat cac agt cta	2976
Met Leu Gly Ser His Phe Arg Ile Gln Trp Phe Trp Tyr His Ser Leu	
977 982 987 992	
gac aaa gga cat gta ggc gta aat atc caa att atg gta gaa gaa atc	3024
Asp Lys Gly His Val Gly Val Asn Ile Gln Ile Met Val Glu Glu Ile	
993 998 1003 1008	
gta gct ggc gag act tcc tgt gat cag agt gaa ggt tct ggt tct tca	3072
Val Ala Gly Glu Thr Ser Cys Asp Gln Ser Glu Gly Ser Gly Ser Ser	
1009 1014 1019 1024	
gaa gag gat gaa tgg aga agt gac aga aaa agt gag agt tac agc gaa	3120
Glu Glu Asp Glu Trp Arg Ser Asp Arg Lys Ser Glu Ser Tyr Ser Glu	
1025 1030 1035 1040	
agt tca agt gac tct tca tct aga tat tcc gat tgg aca gct gat gcg	3168
Ser Ser Ser Asp Ser Ser Arg Tyr Ser Asp Trp Thr Ala Asp Ala	
1041 1046 1051 1056	
ggc atc aat ttg cag cct cct tta aga aca tca tgt cgt cga cga att	3216
Gly Ile Asn Leu Gln Pro Pro Leu Arg Thr Ser Cys Arg Arg Arg Ile	
1057 1062 1067 1072	
act cga ttt tgt agt agt tca gaa gat gaa ata tct act gag aat tta	3264
Thr Arg Phe Cys Ser Ser Ser Glu Asp Glu Ile Ser Thr Glu Asn Leu	
1073 1078 1083 1088	
tct cct cca aaa aga aga cga aag aga aag aaa gaa aat aag cct aag	3312
Ser Pro Pro Lys Arg Arg Arg Lys Arg Lys Lys Glu Asn Lys Pro Lys	
1089 1094 1099 1104	
aag gag atc tgg cag gac cgg aga caa ctg gga att gcc aca gtg gtt	3360
Lys Glu Ile Trp Gln Asp Arg Arg Gln Leu Gly Ile Ala Thr Val Val	

1105	1110	1115	1120	
tgg gat gtg gcc atg gtt ctc tcc aca cat ctg gag atg gga gct gtg				3408
Trp Asp Val Ala Met Val Leu Ser Thr His Leu Glu Met Gly Ala Val				
1121	1126	1131	1136	
gag ctc ttg ggc tgc ccc gca gtg aaa ctg ggt gct ggc ata ggg ctg				3456
Glu Leu Leu Gly Cys Pro Ala Val Lys Leu Gly Ala Gly Ile Gly Leu				
1137	1142	1147	1152	
atg ggc ata gtg gct gcc ctg ctg ggt gct cat gtg act gtc ata gat				3504
Met Gly Ile Val Ala Ala Leu Leu Gly Ala His Val Thr Val Ile Asp				
1153	1158	1163	1168	
cga aaa aat ttg cgg agg atg act cca gca gag ctt gca aat atg gag				3552
Arg Lys Asn Leu Arg Arg Met Thr Pro Ala Glu Leu Ala Asn Met Glu				
1169	1174	1179	1184	
cat tta tat gaa ttt cac cct cca gtt tgg att act gac acc aca ctt				3600
His Leu Tyr Glu Phe His Pro Pro Val Trp Ile Thr Asp Thr Thr Leu				
1185	1190	1195	1200	
aga aaa tct cct ttt gtt cct caa atg ggt gat gag gta ata tat ttt				3648
Arg Lys Ser Pro Phe Val Pro Gln Met Gly Asp Glu Val Ile Tyr Phe				
1201	1206	1211	1216	
cga cag ggt cat gaa gct tat att gag gct gta aga aga aat aat att				3696
Arg Gln Gly His Glu Ala Tyr Ile Glu Ala Val Arg Arg Asn Asn Ile				
1217	1222	1227	1232	
tat gaa ctg aac cct aat aag gag cca tgg aga aaa atg gat ctt agg				3744
Tyr Glu Leu Asn Pro Asn Lys Glu Pro Trp Arg Lys Met Asp Leu Arg				
1233	1238	1243	1248	
ctc aag aaa gaa ttc cac att tta gca agt ggc aaa gat gtt ggt ttg				3792
Leu Lys Lys Glu Phe His Ile Leu Ala Ser Gly Lys Asp Val Gly Leu				
1249	1254	1259	1264	
tta aca gtt att cag att gct ggt ggg gat caa gaa ttg gtt aaa ata				3840
Leu Thr Val Ile Gln Ile Ala Gly Gly Asp Gln Glu Leu Val Lys Ile				
1265	1270	1275	1280	
gtt gga ata cga tat gaa gtt ggg ccc cct aca ctc tgt tgc cta aaa				3888
Val Gly Ile Arg Tyr Glu Val Gly Pro Pro Thr Leu Cys Cys Leu Lys				
1281	1286	1291	1296	
cta gca ttt ata gat cca gca act gga aaa ctt atg gac aaa tct ttc				3936
Leu Ala Phe Ile Asp Pro Ala Thr Gly Lys Leu Met Asp Lys Ser Phe				
1297	1302	1307	1312	
tct att aga tat cat gat atg cca gat gtt att gac ttt ctt gta ttg				3984
Ser Ile Arg Tyr His Asp Met Pro Asp Val Ile Asp Phe Leu Val Leu				
1313	1318	1323	1328	
cgt caa ttt tat gat gaa gca aga cag agg aat tgg cag tct tgt gac				4032
Arg Gln Phe Tyr Asp Glu Ala Arg Gln Arg Asn Trp Gln Ser Cys Asp				
1329	1334	1339	1344	

aga ttc cgc tct att att gat gat gct tgg tgg ttt gga aca gtg tta	4080
Arg Phe Arg Ser Ile Ile Asp Asp Ala Trp Trp Phe Gly Thr Val Leu	
1345 1350 1355 1360	
agt caa gag cca tat caa cca cag tat cct gat agt cat ttc cag tgt	4128
Ser Gln Glu Pro Tyr Gln Pro Gln Tyr Pro Asp Ser His Phe Gln Cys	
1361 1366 1371 1376	
tat att gtt agg tgg gat aat act gaa att gaa aaa ctt agc cca tgg	4176
Tyr Ile Val Arg Trp Asp Asn Thr Glu Ile Glu Lys Leu Ser Pro Trp	
1377 1382 1387 1392	
gac atg gaa cca att cct gat aat gtt gat cca cct gaa gaa tta gga	4224
Asp Met Glu Pro Ile Pro Asp Asn Val Asp Pro Pro Glu Glu Leu Gly	
1393 1398 1403 1408	
gct agt att tct gtc aca aca gat gag cta gag aaa ttg ctc tat aaa	4272
Ala Ser Ile Ser Val Thr Thr Asp Glu Leu Glu Lys Leu Leu Tyr Lys	
1409 1414 1419 1424	
cca caa gct ggt gaa tgg ggt cag aaa tca aga gat gaa gaa tgt gat	4320
Pro Gln Ala Gly Glu Trp Gly Gln Lys Ser Arg Asp Glu Glu Cys Asp	
1425 1430 1435 1440	
aga att atc agt ggt ata gat caa ctt ttg aat ctt gat ata gca gca	4368
Arg Ile Ile Ser Gly Ile Asp Gln Leu Leu Asn Leu Asp Ile Ala Ala	
1441 1446 1451 1456	
gct ttt gca ggc cct gtt gat ttg tgt aca tac ccg aag tac tgt act	4416
Ala Phe Ala Gly Pro Val Asp Leu Cys Thr Tyr Pro Lys Tyr Cys Thr	
1457 1462 1467 1472	
gta gta gct tat cca acc gat ctt tac aca att cga atg aga ctt gtt	4464
Val Val Ala Tyr Pro Thr Asp Leu Tyr Thr Ile Arg Met Arg Leu Val	
1473 1478 1483 1488	
aat cga ttt tac aga gca ctg cat cta gct gaa aac tgg gga gta act	4512
Asn Arg Phe Tyr Arg Ala Leu His Leu Ala Glu Asn Trp Gly Val Thr	
1489 1494 1499 1504	
gat tct tgt cag ctt tct tgg ttt gat tct gtc cta agt ctt gga gac	4560
Asp Ser Cys Gln Leu Ser Trp Phe Asp Ser Val Leu Ser Leu Gly Asp	
1505 1510 1515 1520	
tca tac gat gat agt gat ctt cct aaa aca tct tct gga agg agg aga	4608
Ser Tyr Asp Asp Ser Asp Leu Pro Lys Thr Ser Ser Gly Arg Arg Arg	
1521 1526 1531 1536	
gtc cat gat ggg aaa aaa agc atc aga gct acg aac tat gtt gaa agc	4656
Val His Asp Gly Lys Lys Ser Ile Arg Ala Thr Asn Tyr Val Glu Ser	
1537 1542 1547 1552	
aac tgg aag aaa cag tgt aag gaa cta gtg aac tta att ttt cag tgt	4704
Asn Trp Lys Lys Gln Cys Lys Glu Leu Val Asn Leu Ile Phe Gln Cys	
1553 1558 1563 1568	

gaa gat tct gaa cca ttt	aga cca cct gtt gat ttg gtt gaa tat cca	4752
Glu Asp Ser Glu Pro Phe Arg Gln Pro Val Asp Leu Val Glu Tyr Pro		
1569	1574 1579 1584	
gac tac aga gat att ata gat acc cca atg gat ttt gga aca gta agg	4800	
Asp Tyr Arg Asp Ile Ile Asp Thr Pro Met Asp Phe Gly Thr Val Arg		
1585	1590 1595 1600	
gaa act cta gat gcg gga aat tat gac agc cct ttg gag ttt tgc aaa	4848	
Glu Thr Leu Asp Ala Gly Asn Tyr Asp Ser Pro Leu Glu Phe Cys Lys		
1601	1606 1611 1616	
gac atc cgg ctg ata ttt agc aat gca aaa gcg tat aca cca aac aaa	4896	
Asp Ile Arg Leu Ile Phe Ser Asn Ala Lys Ala Tyr Thr Pro Asn Lys		
1617	1622 1627 1632	
aga tca aag att tat agt atg acc ttg aga tta tct gcc tta ttt gaa	4944	
Arg Ser Lys Ile Tyr Ser Met Thr Leu Arg Leu Ser Ala Leu Phe Glu		
1633	1638 1643 1648	
gaa aaa atg aag aaa atc tct tct gat ttt aaa att ggt caa aaa ttc	4992	
Glu Lys Met Lys Lys Ile Ser Ser Asp Phe Lys Ile Gly Gln Lys Phe		
1649	1654 1659 1664	
aat gaa aaa ctt cga aga agc cag agg ttc aag caa cgg caa aat tgt	5040	
Asn Glu Lys Leu Arg Arg Ser Gln Arg Phe Lys Gln Arg Gln Asn Cys		
1665	1670 1675 1680	
aaa ggt gac agt cag cct aac aaa agt atc aga aac ctc aag ccg aag	5088	
Lys Gly Asp Ser Gln Pro Asn Lys Ser Ile Arg Asn Leu Lys Pro Lys		
1681	1686 1691 1696	
agg tta aaa tct cag aca aaa ata att cct gag ttg gta ggt tct cct	5136	
Arg Leu Lys Ser Gln Thr Lys Ile Ile Pro Glu Leu Val Gly Ser Pro		
1697	1702 1707 1712	
acc cag tct acc tca agt agg aca gct tat ctt gga acc cac aag aca	5184	
Thr Gln Ser Thr Ser Ser Arg Thr Ala Tyr Leu Gly Thr His Lys Thr		
1713	1718 1723 1728	
agt gct ggt atc tct tca ggt gtt act tct ggt gac tct tca gat tca	5232	
Ser Ala Gly Ile Ser Ser Gly Val Thr Ser Gly Asp Ser Ser Asp Ser		
1729	1734 1739 1744	
gca gaa tca tca gaa agg agg aaa aga aat aga cct ata aca aat ggt	5280	
Ala Glu Ser Ser Glu Arg Arg Lys Arg Asn Arg Pro Ile Thr Asn Gly		
1745	1750 1755 1760	
tct aca tta tct gaa agt gaa gtg gaa gat tct tta gct acc tct ttg	5328	
Ser Thr Leu Ser Glu Ser Glu Val Glu Asp Ser Leu Ala Thr Ser Leu		
1761	1766 1771 1776	
tca tcg tca gct tcc agt agt tct gag gaa agc aaa gag agt tcc aga	5376	
Ser Ser Ser Ala Ser Ser Ser Ser Glu Glu Ser Lys Glu Ser Ser Arg		
1777	1782 1787 1792	
gct cgt gaa tcc tcc tca cgc agt ggg cta tcc aga agc agc aat ctc	5424	

Ala Arg Glu Ser Ser Ser Arg Ser Gly Leu Ser Arg Ser Ser Asn Leu	
1793	1798 1803 1808
agg gta acc aga act aga gct gct caa aga aaa act ggt ccc gtt tca	5472
Arg Val Thr Arg Thr Arg Ala Ala Gln Arg Lys Thr Gly Pro Val Ser	
1809	1814 1819 1824
tta gca aat gga tgt ggc aga aaa gcc act cga aag aga gtc tat tta	5520
Leu Ala Asn Gly Cys Gly Arg Lys Ala Thr Arg Lys Arg Val Tyr Leu	
1825	1830 1835 1840
agt gat tct gat aac aat tca ttg gag act ggt gaa att cta aaa gcc	5568
Ser Asp Ser Asp Asn Asn Ser Leu Glu Thr Gly Glu Ile Leu Lys Ala	
1841	1846 1851 1856
aga gct gga aat aac cga aaa gtc tta agg aag tgt gct gct gtg gct	5616
Arg Ala Gly Asn Asn Arg Lys Val Leu Arg Lys Cys Ala Ala Val Ala	
1857	1862 1867 1872
gcc aat aaa ata aag cta atg agt gat gta gaa gag aat tct agc tct	5664
Ala Asn Lys Ile Lys Leu Met Ser Asp Val Glu Glu Asn Ser Ser Ser	
1873	1878 1883 1888
gaa agt gtc tgt tct ggt cgg aag ctg cct cac cgc aat gct tct gct	5712
Glu Ser Val Cys Ser Gly Arg Lys Leu Pro His Arg Asn Ala Ser Ala	
1889	1894 1899 1904
gta gct aga aaa aag tta tta cat aat tct gaa gat gaa cag agc tta	5760
Val Ala Arg Lys Lys Leu Leu His Asn Ser Glu Asp Glu Gln Ser Leu	
1905	1910 1915 1920
aag tca gaa att gaa gaa gag gag cta aaa gat gaa aat caa cta tta	5808
Lys Ser Glu Ile Glu Glu Glu Glu Leu Lys Asp Glu Asn Gln Leu Leu	
1921	1926 1931 1936
cca gtg tcc agt tct cac act gcc cag agc aat gtt gat gaa tct gaa	5856
Pro Val Ser Ser Ser His Thr Ala Gln Ser Asn Val Asp Glu Ser Glu	
1937	1942 1947 1952
aac aga gac tca gag tca gaa agt gat ttg cgg gta gcc cgg aaa aat	5904
Asn Arg Asp Ser Glu Ser Glu Ser Asp Leu Arg Val Ala Arg Lys Asn	
1953	1958 1963 1968
tgg cat gct aat ggt tac aag tcc cat act cca gca cct tca aag aca	5952
Trp His Ala Asn Gly Tyr Lys Ser His Thr Pro Ala Pro Ser Lys Thr	
1969	1974 1979 1984
aaa ttt ctt aaa ata gag tct tct gag gaa gac tct aaa agt cat gat	6000
Lys Phe Leu Lys Ile Glu Ser Ser Glu Glu Asp Ser Lys Ser His Asp	
1985	1990 1995 2000
tca gat cat gca tgt aac aga act gct ggc cca tca acg tct gtg cag	6048
Ser Asp His Ala Cys Asn Arg Thr Ala Gly Pro Ser Thr Ser Val Gln	
2001	2006 2011 2016
aaa ctt aag gca gag agc atc tca gag gaa gca gat tct gaa cca gga	6096
Lys Leu Lys Ala Glu Ser Ile Ser Glu Glu Ala Asp Ser Glu Pro Gly	

2017	2022	2027	2032	
aga tct ggt ggt agg aaa tac aat aca ttt cac aag aat gcg agt ttc Arg Ser Gly Gly Arg Lys Tyr Asn Thr Phe His Lys Asn Ala Ser Phe 2033	2038	2043	2048	6144
ttt aaa aaa acc aag att ctg agt gac tca gaa gac tct gaa tct gaa Phe Lys Lys Thr Lys Ile Leu Ser Asp Ser Glu Asp Ser Glu Ser Glu 2049	2054	2059	2064	6192
gag caa gat aga gaa gat ggg aaa tgt cat aaa atg gaa atg aac cca Glu Gln Asp Arg Glu Asp Gly Lys Cys His Lys Met Glu Met Asn Pro 2065	2070	2075	2080	6240
att tca gga aat ctg aac tgt gac cct att gct atg tcc cag tgt tcc Ile Ser Gly Asn Leu Asn Cys Asp Pro Ile Ala Met Ser Gln Cys Ser 2081	2086	2091	2096	6288
tca gat cat gga tgt gaa act gat tta gat tca gat gat gac aaa ata Ser Asp His Gly Cys Glu Thr Asp Leu Asp Ser Asp Asp Asp Lys Ile 2097	2102	2107	2112	6336
gaa aaa cca aac aat ttt atg aaa gat tct gca tca caa gac aat gga Glu Lys Pro Asn Asn Phe Met Lys Asp Ser Ala Ser Gln Asp Asn Gly 2113	2118	2123	2128	6384
cta agc aga aaa att tcc agg aaa agg gtc tgt tcc agt gac tca gac Leu Ser Arg Lys Ile Ser Arg Lys Arg Val Cys Ser Ser Asp Ser Asp 2129	2134	2139	2144	6432
agt agt tta cag gtg gtt aag aaa tca tca aaa gcc aga aca ggt ctc Ser Ser Leu Gln Val Val Lys Lys Ser Ser Lys Ala Arg Thr Gly Leu 2145	2150	2155	2160	6480
ctg agg att act cga aga tgt gca gct acg gct gcc aat aag atc aag Leu Arg Ile Thr Arg Arg Cys Ala Ala Thr Ala Ala Asn Lys Ile Lys 2161	2166	2171	2176	6528
ctc atg agt gat gta gaa gat gtc agt tta gaa aat gtg cac act aga Leu Met Ser Asp Val Glu Asp Val Ser Leu Glu Asn Val His Thr Arg 2177	2182	2187	2192	6576
agc aaa aat gga agg aaa aaa cct ctc cat ctt gct tgt act aca gct Ser Lys Asn Gly Arg Lys Lys Pro Leu His Leu Ala Cys Thr Thr Ala 2193	2198	2203	2208	6624
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Ile Val Glu Gln Val Lys Glu Lys Thr Asn His Ile Gln Ala Leu Ala				
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<400> 1055

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aga atg gca gat ttt ggg atc tct gct ggc cag ttt gtg gca gtg gtc	168
Met Ala Asp Phe Gly Ile Ser Ala Gly Gln Phe Val Ala Val Val	
1 5 10	
tgg gat aag tca tcc cca gtg gag gct ctg aaa ggt ctg gtg gat aag	216
Trp Asp Lys Ser Ser Pro Val Glu Ala Leu Lys Gly Leu Val Asp Lys	
16 21 26 31	
ctt caa gcg tta acc ggc aat gag ggc cgc gtg tct gtg gaa aac atc	264
Leu Gln Ala Leu Thr Gly Asn Glu Gly Arg Val Ser Val Glu Asn Ile	
32 37 42 47	
aag cag ctg ttg caa tct gcc cac aaa gaa tcc agc ttt gac att att	312
Lys Gln Leu Leu Gln Ser Ala His Lys Glu Ser Ser Phe Asp Ile Ile	
48 53 58 63	
ttg tca ggt tta gtc cca gga agc acc act ctg cac agt gct gag att	360
Leu Ser Gly Leu Val Pro Gly Ser Thr Thr Leu His Ser Ala Glu Ile	
64 69 74 79	
ttg gct gaa atc gcc cgg atc ctt cgg cct ggt gga tgt ctt ttt ctg	408
Leu Ala Glu Ile Ala Arg Ile Leu Arg Pro Gly Gly Cys Leu Phe Leu	
80 85 90 95	
aag gag cca gta gag aca gct gta gat aac aat agc aaa gtg aag aca	456
Lys Glu Pro Val Glu Thr Ala Val Asp Asn Asn Ser Lys Val Lys Thr	
96 101 106 111	
gca tct aag ctg tgt tca gcc ctg act ctt tct ggt ctt gtg gaa gtg	504
Ala Ser Lys Leu Cys Ser Ala Leu Thr Leu Ser Gly Leu Val Glu Val	
112 117 122 127	
aaa gag ctg cag cgg gag ccc cta acc cct gag gaa gta cag tct gtt	552
Lys Glu Leu Gln Arg Glu Pro Leu Thr Pro Glu Glu Val Gln Ser Val	
128 133 138 143	
cga gaa cac ctt ggt cat gaa agt gac aac ctg ctg ttt gtt cag atc	600
Arg Glu His Leu Gly His Glu Ser Asp Asn Leu Leu Phe Val Gln Ile	
144 149 154 159	
aca ggc aaa aaa cca aac ttt gaa gtg ggt tct tct agg cag ctt aag	648
Thr Gly Lys Lys Pro Asn Phe Glu Val Gly Ser Ser Arg Gln Leu Lys	
160 165 170 175	

ctt tcc atc acc aag aag tct tct cct tca gtg aaa cct gct gtg gac Leu Ser Ile Thr Lys Lys Ser Ser Pro Ser Val Lys Pro Ala Val Asp 176 181 186 191	696
cct gct gct gcc aag ctg tgg acc ctc tca gcc aac gat atg gag gac Pro Ala Ala Ala Lys Leu Trp Thr Leu Ser Ala Asn Asp Met Glu Asp 192 197 202 207	744
gac agc atg gat ctc att gac tca gat gag ctg ctg gat cca gaa gat Asp Ser Met Asp Leu Ile Asp Ser Asp Glu Leu Leu Asp Pro Glu Asp 208 213 218 223	792
ttg aag aag cca gat cca gct tcc ctg cgg gct gct tct tgt ggg gaa Leu Lys Lys Pro Asp Pro Ala Ser Leu Arg Ala Ala Ser Cys Gly Glu 224 229 234 239	840
ggg aaa aag agg aag gcc tgt aag aac tgc acc tgt ggc ctt gcc gaa Gly Lys Lys Arg Lys Ala Cys Lys Asn Cys Thr Cys Gly Leu Ala Glu 240 245 250 255	888
gaa ctg gaa aaa gag aag tca agg gaa cag atg agc tcc caa ccc aag Glu Leu Glu Lys Glu Lys Ser Arg Glu Gln Met Ser Ser Gln Pro Lys 256 261 266 271	936
tca gct tgt gga aac tgc tac ctg ggc gat gcc ttc cgc tgt gcc agc Ser Ala Cys Gly Asn Cys Tyr Leu Gly Asp Ala Phe Arg Cys Ala Ser 272 277 282 287	984
tgc ccc tac ctt ggg atg cca gcc ttc aaa cct ggg gaa aag gtg ctt Cys Pro Tyr Leu Gly Met Pro Ala Phe Lys Pro Gly Glu Lys Val Leu 288 293 298 303	1032
ctg agt gat agc aat ctt cat gat gcc tag g aggttcctga catgggaccc Leu Ser Asp Ser Asn Leu His Asp Ala * 304 309	1083
atctgctcct ccagccaact cctgtccctc acatcccacc atggtggctc ctcccacctc	1143
ctctggattt gtctactctg agatctgttt gcagagtggg tgcttagcag acagagtgaa	1203
gctggctggg gggcacagtg gtgtgtagtg ctgctgtgta tcaaaagacc aaggtattat	1263
gggacctggt ttcagaatgg gatgggtttc ttcacctcat gttaagagaa gggagtgtgt	1323
cctgaagaag cccttcttct gatgttaaaa tgctgaccag aacgctcttg agcccaggca	1383
tcgttgagca ttaacactct gtgacagagc tgcagacccc tgccttgagt ctcatctcag	1443
caatgctgcc accctcttgt ctttcagagt tgttagttaa ctccattctt tgtgacacga	1503
gtcaagtggc tcacaacctc ctcagggcac cagaggactc actcactggt tgctgtgatg	1563
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tgtgtcctgt tgtcatttat gttaaccttc aagatatgca gcaagtttaa tacctgaagg	1683

ttaacataaa tgacaacagg acacagatgc aatgctacag tcaaagtgg ttggggatgg	1743
aagggggcag agggacactg gatatcatca cagcaaccag tgagtgagtc ctctggtgcc	1803
ctgaggaggt tgtgagccac ttgactcgtg tcacaaagaa tggagtaaac taacaactct	1863
gaaagacaag aggggtggcag cattgctgag atgagactca aggcaggggt ctgcagctct	1923
gtcacagagt gttaatgctc aacgatgcct gggctcaaga gcgttctggt cagcatttta	1983
acatcagaag aagggttctc tcaggacaca ctcccttctc ttaacatgag gtgaagaaac	2043
ccatcccatt ctgaaaccag gtcccataat accttggctc ttgatacac agcagcacta	2103
cacaccactg tgccccccca gccagcttca ctctgtctgc taagcaccca ctctgcaaac	2163
agatctcaga gtgaacaaat nccagagagg tgggagagcc accatggngg gatgtgaggn	2223
acagagtggc ttgangagca aatggtccca tgtcaagacc tntagcatc atgagattgt	2283
atactcagaa cacctttncc cagntngaag cntgcattca ggtagggagt tgccaagcga	2343
ggatnnccaa ntacattcac aactgacctg ggttgagtat cgtccctgac ttttttcat	2403
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<210> 1056
 <211> 2398
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (124)..(1023)

<220>
 <221> misc_feature
 <222> (1)...(2398)
 <223> n = a,t,c or g

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aga atg gca gat ttt ggg atc tct gct ggc cag ttt gtg gca gtg gtc	168
Met Ala Asp Phe Gly Ile Ser Ala Gly Gln Phe Val Ala Val Val	
1 5 10	
tgg gat aag tca tcc cca gtg gag gct ctg aaa ggt ctg gtg gat aag	216
Trp Asp Lys Ser Ser Pro Val Glu Ala Leu Lys Gly Leu Val Asp Lys	
16 21 26 31	
ctt caa gcg tta acc ggc aat gag ggc cgc gtg tct gtg gaa aac atc	264

Leu Gln Ala Leu Thr Gly Asn Glu Gly Arg Val Ser Val Glu Asn Ile	
32 37 42 47	
aag cag ctg ttg caa tgt tta gtc cca gga agc acc act ctg cac agt	312
Lys Gln Leu Leu Gln Cys Leu Val Pro Gly Ser Thr Thr Leu His Ser	
48 53 58 63	
gct gag att ttg gct gaa atc gcc cgg atc ctt cgg cct ggt gga tgt	360
Ala Glu Ile Leu Ala Glu Ile Ala Arg Ile Leu Arg Pro Gly Gly Cys	
64 69 74 79	
ctt ttt ctg aag gag cca gta gag aca gct gta gat aac aat agc aaa	408
Leu Phe Leu Lys Glu Pro Val Glu Thr Ala Val Asp Asn Asn Ser Lys	
80 85 90 95	
gtg aag aca gca tct aag ctg tgt tca gcc ctg act ctt tct ggt ctt	456
Val Lys Thr Ala Ser Lys Leu Cys Ser Ala Leu Thr Leu Ser Gly Leu	
96 101 106 111	
gtg gaa gtg aaa gag ctg cag cgg gag ccc cta acc cct gag gaa gta	504
Val Glu Val Lys Glu Leu Gln Arg Glu Pro Leu Thr Pro Glu Glu Val	
112 117 122 127	
cag tct gtt cga gaa cac ctt ggt cat gaa agt gac aac ctg ctg ttt	552
Gln Ser Val Arg Glu His Leu Gly His Glu Ser Asp Asn Leu Leu Phe	
128 133 138 143	
gtt cag atc aca ggc aaa aaa cca aac ttt gaa gtg ggt tct tct agg	600
Val Gln Ile Thr Gly Lys Lys Pro Asn Phe Glu Val Gly Ser Ser Arg	
144 149 154 159	
cag ctt aag ctt tcc atc acc aag aag tct tct cct tca gtg aaa cct	648
Gln Leu Lys Leu Ser Ile Thr Lys Lys Ser Ser Pro Ser Val Lys Pro	
160 165 170 175	
gct gtg gac cct gct gct gcc aag ctg tgg acc ctc tca gcc aac gat	696
Ala Val Asp Pro Ala Ala Ala Lys Leu Trp Thr Leu Ser Ala Asn Asp	
176 181 186 191	
atg gag gac gac agc atg gat ctc att gac tca gat gag ctg ctg gat	744
Met Glu Asp Asp Ser Met Asp Leu Ile Asp Ser Asp Glu Leu Leu Asp	
192 197 202 207	
cca gaa gat ttg aag aag cca gat cca gct tcc ctg cgg gct gct tct	792
Pro Glu Asp Leu Lys Lys Pro Asp Pro Ala Ser Leu Arg Ala Ala Ser	
208 213 218 223	
tgt ggg gaa ggg aaa aag agg aag gcc tgt aag aac tgc acc tgt ggc	840
Cys Gly Glu Gly Lys Lys Arg Lys Ala Cys Lys Asn Cys Thr Cys Gly	
224 229 234 239	
ctt gcc gaa gaa ctg gaa aaa gag aag tca agg gaa cag atg agc tcc	888
Leu Ala Glu Glu Leu Glu Lys Glu Lys Ser Arg Glu Gln Met Ser Ser	
240 245 250 255	
caa ccc aag tca gct tgt gga aac tgc tac ctg ggc gat gcc ttc cgc	936
Gln Pro Lys Ser Ala Cys Gly Asn Cys Tyr Leu Gly Asp Ala Phe Arg	

256	261	266	271	
tgt gcc agc tgc ccc tac ctt ggg atg cca gcc ttc aaa cct ggg gaa				984
Cys Ala Ser Cys Pro Tyr Leu Gly Met Pro Ala Phe Lys Pro Gly Glu				
272	277	282	287	
aag gtg ctt ctg agt gat agc aat ctt cat gat gcc tag gaggttcctg				1033
Lys Val Leu Leu Ser Asp Ser Asn Leu His Asp Ala *				
288	293	298		
acatgggacc catctgctcc tccagccaac tctgtctcct cacatcccac catggtggct				1093
cctcccacct cctctggatt tgttcactct gagatctgtt tgcagagtgg gtgcttagca				1153
gacagagtga agctggctgg ggggcacagt ggtgtgtagt gctgctgtgt atcaaaagac				1213
caaggtatta tgggacctgg ttccagaatg ggatggggtt cttcacctca tgttaagaga				1273
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agcattgcat ctgtgtcctg ttgtcattta tgttaacct caagatatgc agcaagttaa				1633
atacctgaag gttaacataa atgacaacag gacacagatg caatgctaca gtcaaagtgt				1693
gttggggatg gaagggggca gagggacact ggatatcatc acagcaacca gtgagtgagt				1753
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ctaacaactc tgaaagacaa gaggggtggca gcattgctga gatgagactc aaggcagggg				1873
tctgcagctc tgtcacagag tgttaatgct caacgatgcc tgggctcaag agcgttctgg				1933
tcagcatttt aacatcagaa gaagggttc ttcaggacac actcccttct cttaacatga				1993
ggtgaagaaa cccatcccat tctgaaacca ggtcccataa taccttggtc ttttgataca				2053
cagcagcact acacaccact gtgccccccc agccagcttc actctgtctg ctaagcacc				2113
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ggatgtgagg nacagagtgg cttgangagc aaatgggtccc atgtcaagac ctntagcat				2233
catgagattg tatactcaga acacctttnc ccagntngaa gcntgcattc aggtagggag				2293
ttgccaagcg aggatnncca antacattca caactgacct gggttgagta tcgtccctga				2353
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<210> 1057
 <211> 1902
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (414)..(1883)

<400> 1057

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ttcctgaaaag cttcgtaggg cccgagccct gtgagcccag gttctgcgcc cactaggagg	180
tgtcatgctg actgcttttt ttaaagccct agaatcttgg cttcggcggt tggggtaagc	240
tccgttctcg ttctcaagcg cgtttccgcg aactctcgcg ggattgacgg gccgtctcga	300
gagccggcat ctctaggag ctagtcctgg tcctcggcta ggcggcttgg ggtcgcggcg	360
taactgggga gccagcctga cgccggcgga ccccgctgt gatcctggca acg atg	416
	Met
	1
gat gat gac ttg atg ttg gca ctg cgg ctt cag gag gag tgg aac ttg	464
Asp Asp Asp Leu Met Leu Ala Leu Arg Leu Gln Glu Glu Trp Asn Leu	
2 7 12 17	
cag gag gcg gag cgc gat cat gcc cag gag tcc ctg tgc cta gtg gac	512
Gln Glu Ala Glu Arg Asp His Ala Gln Glu Ser Leu Ser Leu Val Asp	
18 23 28 33	
gcg tgc tgg gag ttg gtg gac ccc aca ccg gac ttg cag gca ctg ttt	560
Ala Ser Trp Glu Leu Val Asp Pro Thr Pro Asp Leu Gln Ala Leu Phe	
34 39 44 49	
gtt cag ttt aac gac caa ttc ttc tgg ggc cag ctg gag gcc gtc gag	608
Val Gln Phe Asn Asp Gln Phe Phe Trp Gly Gln Leu Glu Ala Val Glu	
50 55 60 65	
gtg aag tgg agc gtg cga atg acc ctg tgt gct ggg ata tgc agc tat	656
Val Lys Trp Ser Val Arg Met Thr Leu Cys Ala Gly Ile Cys Ser Tyr	
66 71 76 81	
gaa ggg aag ggt gga atg tgt tcc atc cgt ctc agc gaa ccc ctt ttg	704
Glu Gly Lys Gly Gly Met Cys Ser Ile Arg Leu Ser Glu Pro Leu Leu	
82 87 92 97	
aag ttg agg cca aga aag gat ctt gta gag acc ctc ctg cat gaa atg	752
Lys Leu Arg Pro Arg Lys Asp Leu Val Glu Thr Leu Leu His Glu Met	
98 103 108 113	
ata cat gcc tat tta ttt gtc act aat aac gac aaa gac cga gaa ggg	800

Ile	His	Ala	Tyr	Leu	Phe	Val	Thr	Asn	Asn	Asp	Lys	Asp	Arg	Glu	Gly		
114					119					124					129		
cat	ggt	cca	gaa	ttt	tgt	aaa	cat	atg	cat	cgc	atc	aac	agc	ctg	act	848	
His	Gly	Pro	Glu	Phe	Cys	Lys	His	Met	His	Arg	Ile	Asn	Ser	Leu	Thr		
130					135					140					145		
gga	gcc	aat	ata	acg	gta	tac	cat	act	ttt	cac	gat	gag	gtg	gat	gag	896	
Gly	Ala	Asn	Ile	Thr	Val	Tyr	His	Thr	Phe	His	Asp	Glu	Val	Asp	Glu		
146					151					156					161		
tat	cgg	cga	cac	tgg	tgg	cgc	tgc	aat	ggg	ccg	tgc	cag	cac	agg	cca	944	
Tyr	Arg	Arg	His	Trp	Trp	Arg	Cys	Asn	Gly	Pro	Cys	Gln	His	Arg	Pro		
162					167					172					177		
ccg	tat	tac	ggc	tat	gtc	aaa	cga	gct	act	aac	agg	gaa	ccc	tct	gct	992	
Pro	Tyr	Tyr	Gly	Tyr	Val	Lys	Arg	Ala	Thr	Asn	Arg	Glu	Pro	Ser	Ala		
178					183					188					193		
cat	gac	tat	tgg	tgg	gct	gag	cac	cag	aaa	acc	tgt	gga	ggc	act	tac	1040	
His	Asp	Tyr	Trp	Trp	Ala	Glu	His	Gln	Lys	Thr	Cys	Gly	Gly	Thr	Tyr		
194					199					204					209		
ata	aaa	atc	aag	gaa	cca	gag	aat	tac	tca	aaa	aaa	ggc	aaa	gga	aag	1088	
Ile	Lys	Ile	Lys	Glu	Pro	Glu	Asn	Tyr	Ser	Lys	Lys	Gly	Lys	Gly	Lys		
210					215					220					225		
gca	aaa	cta	gga	aag	gaa	cca	gta	ttg	gcc	gca	gag	aat	aaa	gat	aaa	1136	
Ala	Lys	Leu	Gly	Lys	Glu	Pro	Val	Leu	Ala	Ala	Glu	Asn	Lys	Asp	Lys		
226					231					236					241		
ccc	aac	aga	ggt	gag	gcc	cag	cta	gta	atc	cct	ttt	agt	ggg	aaa	gga	1184	
Pro	Asn	Arg	Gly	Glu	Ala	Gln	Leu	Val	Ile	Pro	Phe	Ser	Gly	Lys	Gly		
242					247					252					257		
tat	gtt	cta	gga	gaa	aca	agc	aat	tta	cct	tca	cct	ggg	aaa	ctg	atc	1232	
Tyr	Val	Leu	Gly	Glu	Thr	Ser	Asn	Leu	Pro	Ser	Pro	Gly	Lys	Leu	Ile		
258					263					268					273		
act	tca	cat	gcc	att	aat	aaa	acc	caa	gat	ctt	tta	aat	caa	aac	cat	1280	
Thr	Ser	His	Ala	Ile	Asn	Lys	Thr	Gln	Asp	Leu	Leu	Asn	Gln	Asn	His		
274					279					284					289		
tca	gca	aat	gct	gta	aga	ctt	aat	tct	aaa	atc	aag	gtg	aaa	ttt	gaa	1328	
Ser	Ala	Asn	Ala	Val	Arg	Leu	Asn	Ser	Lys	Ile	Lys	Val	Lys	Phe	Glu		
290					295					300					305		
cag	aat	ggt	tca	agt	aaa	aat	tct	cat	ctg	gtc	tcc	cct	gct	gtt	agt	1376	
Gln	Asn	Gly	Ser	Ser	Lys	Asn	Ser	His	Leu	Val	Ser	Pro	Ala	Val	Ser		
306					311					316					321		
aac	agt	cac	caa	aat	gtt	cta	agc	aac	tac	ttt	cct	aga	gta	tca	ttt	1424	
Asn	Ser	His	Gln	Asn	Val	Leu	Ser	Asn	Tyr	Phe	Pro	Arg	Val	Ser	Phe		
322					327					332					337		
gcc	aac	caa	aag	gct	ttc	aga	ggt	gtg	aat	gga	tct	cca	agg	ata	agt	1472	
Ala	Asn	Gln	Lys	Ala	Phe	Arg	Gly	Val	Asn	Gly	Ser	Pro	Arg	Ile	Ser		

338	343	348	353	
gta aca gtt ggc aac atc cct aaa aac tca gtc tct tct agt tct cag				1520
Val Thr Val Gly Asn Ile Pro Lys Asn Ser Val Ser Ser Ser Ser Gln				
354	359	364	369	
aga agg ggt tca tct tct aag ata tcc cta aga aat tct tca aaa gta				1568
Arg Arg Gly Ser Ser Ser Lys Ile Ser Leu Arg Asn Ser Ser Lys Val				
370	375	380	385	
acg gaa tca gca tct gtg atg cca tcc cag gat gtg agt ggg tct gaa				1616
Thr Glu Ser Ala Ser Val Met Pro Ser Gln Asp Val Ser Gly Ser Glu				
386	391	396	401	
gat aca ttc cca aat aaa cga cct agg cta gaa gat aag act gtt ttt				1664
Asp Thr Phe Pro Asn Lys Arg Pro Arg Leu Glu Asp Lys Thr Val Phe				
402	407	412	417	
gac aat ttt ttt atc aag aaa gag caa ata aaa agc agt ggt aat gat				1712
Asp Asn Phe Phe Ile Lys Lys Glu Gln Ile Lys Ser Ser Gly Asn Asp				
418	423	428	433	
cca aag tat agt aca acc aca gct cag aat tcc agc agt tca tcc agt				1760
Pro Lys Tyr Ser Thr Thr Thr Ala Gln Asn Ser Ser Ser Ser Ser				
434	439	444	449	
cag agc aaa atg gtt aat tgc cca gtt tgt cag aat gaa gtt ctg gag				1808
Gln Ser Lys Met Val Asn Cys Pro Val Cys Gln Asn Glu Val Leu Glu				
450	455	460	465	
tct cag att aat gag cac ttg gac tgg tgc ctt gaa ggt gac agc atc				1856
Ser Gln Ile Asn Glu His Leu Asp Trp Cys Leu Glu Gly Asp Ser Ile				
466	471	476	481	
aaa gtc aaa agc gag gaa agt ctt tga aaaaggtttc aaagtcttc				1902
Lys Val Lys Ser Glu Glu Ser Leu *				
482	487			

<210> 1058

<211> 1450

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (397)..(1176)

<220>

<221> misc_feature

<222> (1)...(1450)

<223> n = a,t,c or g

<400> 1058

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tctccttact ctctgactc ttaattacat cacacctgtg tcgacactct ctgggaaaag	180
actgaagaaa taatcttttc aagaagcaga aagctcctgc atacataggc tgatacgcca	240
cctactgcaa aaccgagctg acagcgcagg cantgctgcc agcgtttcca ttccatcacc	300
aggctggggc tgaataaagg cgtgcttgtg tggtagtgtc tctttttaaa aaatctcaaa	360
gccaagaaga acaagctgaa atagcatctt caaaaa atg gag cgt aaa ata aac	414
Met Glu Arg Lys Ile Asn	
1	
aga aga gaa aaa gaa aag gag tat gaa ggg aaa cac aac agc ctg gaa	462
Arg Arg Glu Lys Glu Lys Glu Tyr Glu Gly Lys His Asn Ser Leu Glu	
7 12 17 22	
gat act gat caa gga aag aac tgc aaa tcc aca ctg atg acc ctc aac	510
Asp Thr Asp Gln Gly Lys Asn Cys Lys Ser Thr Leu Met Thr Leu Asn	
23 28 33 38	
gtt ggt gga tat tta tac att act caa aaa caa aca ctg acc aag tac	558
Val Gly Gly Tyr Leu Tyr Ile Thr Gln Lys Gln Thr Leu Thr Lys Tyr	
39 44 49 54	
cca gac act ttc ctt gaa ggt ata gta aat gga aaa atc ctc tgc ccg	606
Pro Asp Thr Phe Leu Glu Gly Ile Val Asn Gly Lys Ile Leu Cys Pro	
55 60 65 70	
ttt gat gct gat ggt cat tat ttc ata gac agg gat ggt ctc ctc ttc	654
Phe Asp Ala Asp Gly His Tyr Phe Ile Asp Arg Asp Gly Leu Leu Phe	
71 76 81 86	
agg cat gtc cta aac ttc cta cga aat gga gaa ctt cta ttg ccc gaa	702
Arg His Val Leu Asn Phe Leu Arg Asn Gly Glu Leu Leu Leu Pro Glu	
87 92 97 102	
ggg ttt cga gaa aat caa ctt ctt gca caa gaa gca gaa ttc ttt cag	750
Gly Phe Arg Glu Asn Gln Leu Leu Ala Gln Glu Ala Glu Phe Phe Gln	
103 108 113 118	
ctc aag gga ctg gca gag gaa gtg aaa tcc agg tgg gag aaa gaa cag	798
Leu Lys Gly Leu Ala Glu Glu Val Lys Ser Arg Trp Glu Lys Glu Gln	
119 124 129 134	
cta aca ccc aga gag act act ttc ttg gaa ata aca gat aac cac gat	846
Leu Thr Pro Arg Glu Thr Thr Phe Leu Glu Ile Thr Asp Asn His Asp	
135 140 145 150	
cgt tca caa gga tta aga atc ttc tgt aat gct cct gat ttc ata tca	894
Arg Ser Gln Gly Leu Arg Ile Phe Cys Asn Ala Pro Asp Phe Ile Ser	
151 156 161 166	
aaa ata aag tct cgc att gtt ctg gtg tcc aaa agc agg ctg gat gga	942

Lys	Ile	Lys	Ser	Arg	Ile	Val	Leu	Val	Ser	Lys	Ser	Arg	Leu	Asp	Gly		
167					172					177					182		
ttt	cca	gag	gag	ttt	tca	ata	tcg	tca	aat	atc	atc	caa	ttt	aaa	tac		990
Phe	Pro	Glu	Glu	Phe	Ser	Ile	Ser	Ser	Asn	Ile	Ile	Gln	Phe	Lys	Tyr		
183					188					193					198		
ttc	ata	aag	tct	gaa	aat	ggc	act	cga	ctt	gta	cta	aag	gaa	gac	aac		1038
Phe	Ile	Lys	Ser	Glu	Asn	Gly	Thr	Arg	Leu	Val	Leu	Lys	Glu	Asp	Asn		
199					204					209					214		
acc	ttt	gtc	tgt	acc	ttg	gaa	act	ctt	aag	ttt	gag	gct	atc	atg	atg		1086
Thr	Phe	Val	Cys	Thr	Leu	Glu	Thr	Leu	Lys	Phe	Gly	Ala	Ile	Met	Met		
215					220					225					230		
gct	tta	aag	tgt	ggc	ttt	aga	ctg	ctg	acc	agc	ctg	gat	tgt	tcc	aaa		1134
Ala	Leu	Lys	Cys	Gly	Phe	Arg	Leu	Leu	Thr	Ser	Leu	Asp	Cys	Ser	Lys		
231					236					241					246		
ggg	tca	att	gtt	cac	agc	gat	gca	ctt	cat	ttt	atc	aag	taa	ttacctg			1183
Gly	Ser	Ile	Val	His	Ser	Asp	Ala	Leu	His	Phe	Ile	Lys	*				
247					252					257							
tgtcacgaac aaaggcaaca agcatgcagc cagcaagctt cggaacacca cagcatcaaa																1243	
gacatcccaa ataacatgcc cagctagctc tgtactacag agccctgcta ctaatcaatt																1303	
actgtgagct aacggatatgt aaattctatc gctaaagatg tccttcctct ggggtgttcc																1363	
tactgatcag actcttccac ctaaaatgaa aacagtaacc ttctatatac tgtaaataaa																1423	
gactgaaagc ttttgctaaa aaaaaaa																1450	

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 <213> Homo sapiens

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 <222> (10)..(2130)

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		Met	Gly	Asp	Glu	Arg	Pro	His	Tyr	Tyr	Gly	Lys	His	Gly			
		1					5					10					
acg	cca	cag	aag	tat	gat	ccc	act	ttc	aaa	gga	ccc	att	tac	aat	agg		96
Thr	Pro	Gln	Lys	Tyr	Asp	Pro	Thr	Phe	Lys	Gly	Pro	Ile	Tyr	Asn	Arg		

14	19	24	29	
ggc tgc acg gat atc ata tgc tgt gtg ttc ctg ctc ctg gcc att gtg				144
Gly Cys Thr Asp Ile Ile Cys Cys Val Phe Leu Leu Leu Ala Ile Val				
30	35	40	45	
ggc tac gtg gct gta ggc atc ata gcc tgg act cat gga gac cct cga				192
Gly Tyr Val Ala Val Gly Ile Ile Ala Trp Thr His Gly Asp Pro Arg				
46	51	56	61	
aag gtg atc tac ccc act gat agc cgg ggc gag ttc tgc ggg cag aag				240
Lys Val Ile Tyr Pro Thr Asp Ser Arg Gly Glu Phe Cys Gly Gln Lys				
62	67	72	77	
ggc aca aaa aac gag aac aaa ccc tat ctg ttt tat ttc aac att gtg				288
Gly Thr Lys Asn Glu Asn Lys Pro Tyr Leu Phe Tyr Phe Asn Ile Val				
78	83	88	93	
aaa tgt gcc agc ccc ctg gtt ctg ctg gaa ttc caa tgt ccc act ccc				336
Lys Cys Ala Ser Pro Leu Val Leu Leu Glu Phe Gln Cys Pro Thr Pro				
94	99	104	109	
cag atc tgc gtg gaa aaa tgc ccc gac cgc tac ctc acg tac ctg aat				384
Gln Ile Cys Val Glu Lys Cys Pro Asp Arg Tyr Leu Thr Tyr Leu Asn				
110	115	120	125	
gct cgc agc tcc cgg gac ttt gag tac tat aag cag ttc tgt gtt cct				432
Ala Arg Ser Ser Arg Asp Phe Glu Tyr Tyr Lys Gln Phe Cys Val Pro				
126	131	136	141	
ggc ttc aag aac aat aaa gga gtg gct gag gtg ctt caa gat ggt gac				480
Gly Phe Lys Asn Asn Lys Gly Val Ala Glu Val Leu Gln Asp Gly Asp				
142	147	152	157	
tgc cct gct gtc ctc atc ccc agc aaa ccc ttg gcc cgg aga tgc ttc				528
Cys Pro Ala Val Leu Ile Pro Ser Lys Pro Leu Ala Arg Arg Cys Phe				
158	163	168	173	
ccc gct atc cac gcc tac aag ggt gtc ctg atg gtg ggc aat gag acg				576
Pro Ala Ile His Ala Tyr Lys Gly Val Leu Met Val Gly Asn Glu Thr				
174	179	184	189	
acc tat gag gat ggg cat ggc tcc cgg aaa aac atc aca gac ctg gtg				624
Thr Tyr Glu Asp Gly His Gly Ser Arg Lys Asn Ile Thr Asp Leu Val				
190	195	200	205	
gag ggc gcc aag aaa gcc aat gga gtc cta gag gcg cgg caa ctc gcc				672
Glu Gly Ala Lys Lys Ala Asn Gly Val Leu Glu Ala Arg Gln Leu Ala				
206	211	216	221	
atg cgc ata ttt gaa gat tac acc gtc tct tgg tac tgg att atc ata				720
Met Arg Ile Phe Glu Asp Tyr Thr Val Ser Trp Tyr Trp Ile Ile Ile				
222	227	232	237	
ggc ctg gtc att gcc atg gcg atg agc ctc ctg ttc atc atc ctg ctt				768
Gly Leu Val Ile Ala Met Ala Met Ser Leu Leu Phe Ile Ile Leu Leu				
238	243	248	253	

cgc ttc ctg gct ggt att atg gtc tgg gtg atg atc atc atg gtg att	816
Arg Phe Leu Ala Gly Ile Met Val Trp Val Met Ile Ile Met Val Ile	
254 259 264 269	
ctg gtg ctg ggc tac gga ata ttt cac tgc tac atg gag tac tcc cga	864
Leu Val Leu Gly Tyr Gly Ile Phe His Cys Tyr Met Glu Tyr Ser Arg	
270 275 280 285	
ctg cgt ggt gag gcc ggc tct gat gtc tct ttg gtg gac ctc ggc ttt	912
Leu Arg Gly Glu Ala Gly Ser Asp Val Ser Leu Val Asp Leu Gly Phe	
286 291 296 301	
cag acg gat ttc cgg gtg tac ctg cac tta cgg cag acc tgg ttg gcc	960
Gln Thr Asp Phe Arg Val Tyr Leu His Leu Arg Gln Thr Trp Leu Ala	
302 307 312 317	
ttt atg atc att ctg agt atc ctt gaa gtc att atc atc ttg ctg ctc	1008
Phe Met Ile Ile Leu Ser Ile Leu Glu Val Ile Ile Ile Leu Leu Leu	
318 323 328 333	
atc ttt ctc cgg aag aga att ctc atc gcg att gca ctc atc aaa gaa	1056
Ile Phe Leu Arg Lys Arg Ile Leu Ile Ala Ile Ala Leu Ile Lys Glu	
334 339 344 349	
gcc agc agg gct gtg gga tac gtc atg tgc tcc ttg ctc tac cca ctg	1104
Ala Ser Arg Ala Val Gly Tyr Val Met Cys Ser Leu Leu Tyr Pro Leu	
350 355 360 365	
gtc acc ttc ttc ttg ctg tgc ctc tgc atc gcc tac tgg gcc agc act	1152
Val Thr Phe Phe Leu Leu Cys Leu Cys Ile Ala Tyr Trp Ala Ser Thr	
366 371 376 381	
gct gtc ttc ctg tcc act tcc aac gaa gcg gtc tat aag atc ttt gat	1200
Ala Val Phe Leu Ser Thr Ser Asn Glu Ala Val Tyr Lys Ile Phe Asp	
382 387 392 397	
gac agc ccc tgc cca ttt act gcg aaa acc tgc aac cca gag acc ttc	1248
Asp Ser Pro Cys Pro Phe Thr Ala Lys Thr Cys Asn Pro Glu Thr Phe	
398 403 408 413	
ccc tcc tcc aat gag tcc cgc caa tgc ccc aat gcc cgt tgc cag ttc	1296
Pro Ser Ser Asn Glu Ser Arg Gln Cys Pro Asn Ala Arg Cys Gln Phe	
414 419 424 429	
gcc ttc tac ggt ggt gag tgc ggc tac cac cgg gcc ctg ctg ggc ctg	1344
Ala Phe Tyr Gly Gly Glu Ser Gly Tyr His Arg Ala Leu Leu Gly Leu	
430 435 440 445	
cag atc ttc aat gcc ttc atg ttc ttc tgg ttg gcc aac ttc gtg ctg	1392
Gln Ile Phe Asn Ala Phe Met Phe Phe Trp Leu Ala Asn Phe Val Leu	
446 451 456 461	
gcg ctg ggc cag gtc acg ctg gcc ggg gcc ttt gcc tcc tac tac tgg	1440
Ala Leu Gly Gln Val Thr Leu Ala Gly Ala Phe Ala Ser Tyr Tyr Trp	
462 467 472 477	

gcc ctg cgc aag ccg gac gac ctg ccg gcc ttc ccg ctc ttc tct gcc	1488
Ala Leu Arg Lys Pro Asp Asp Leu Pro Ala Phe Pro Leu Phe Ser Ala	
478 483 488 493	
ttt ggc cgg gcg ctc agg tac cac aca ggc tcc ctg gcc ttt ggc gcg	1536
Phe Gly Arg Ala Leu Arg Tyr His Thr Gly Ser Leu Ala Phe Gly Ala	
494 499 504 509	
ctc atc ctg gcc att gtg cag atc atc cgt gtg ata ctc gag tac ctg	1584
Leu Ile Leu Ala Ile Val Gln Ile Ile Arg Val Ile Leu Glu Tyr Leu	
510 515 520 525	
gat cag cgg ctg aaa gct gca gag aac aag ttt gcc aag tgc ctc atg	1632
Asp Gln Arg Leu Lys Ala Ala Glu Asn Lys Phe Ala Lys Cys Leu Met	
526 531 536 541	
acc tgt ctc aaa tgc tgc ttc tgg tgc ctg gag aag ttc atc aaa ttc	1680
Thr Cys Leu Lys Cys Cys Phe Trp Cys Leu Glu Lys Phe Ile Lys Phe	
542 547 552 557	
ctt aat agg aat gcc tac atc atg att gcc atc tac ggc acc aat ttc	1728
Leu Asn Arg Asn Ala Tyr Ile Met Ile Ala Ile Tyr Gly Thr Asn Phe	
558 563 568 573	
tgc acc tcg gcc agg aat gcc ttc ttc ctg ctc atg aga aac atc atc	1776
Cys Thr Ser Ala Arg Asn Ala Phe Phe Leu Leu Met Arg Asn Ile Ile	
574 579 584 589	
aga gtg gct gtc ctg gat aaa gtt act gac ttc ctc ttc ctg ttg ggc	1824
Arg Val Ala Val Leu Asp Lys Val Thr Asp Phe Leu Phe Leu Leu Gly	
590 595 600 605	
aaa ctt ctg atc gtt ggt agt gtg ggg atc ctg gct ttc ttc ttc ttc	1872
Lys Leu Leu Ile Val Gly Ser Val Gly Ile Leu Ala Phe Phe Phe Phe	
606 611 616 621	
acc cac cgt atc agg atc gtg cag gat aca gca cca ccc ctc aat tat	1920
Thr His Arg Ile Arg Ile Val Gln Asp Thr Ala Pro Pro Leu Asn Tyr	
622 627 632 637	
tac tgg gtt cct ata ctg acg gtg atc gtt ggc tcc tac ttg att gca	1968
Tyr Trp Val Pro Ile Leu Thr Val Ile Val Gly Ser Tyr Leu Ile Ala	
638 643 648 653	
cac ggt ttc ttc agc gtc tat ggc atg tgt gtg gac acg ctg ttc ctc	2016
His Gly Phe Phe Ser Val Tyr Gly Met Cys Val Asp Thr Leu Phe Leu	
654 659 664 669	
tgc ttc ttg gag gac ctg gag agg aat gac ggc tcg gcc gag agg cct	2064
Cys Phe Leu Glu Asp Leu Glu Arg Asn Asp Gly Ser Ala Glu Arg Pro	
670 675 680 685	
tac ttc atg tct tcc acc ctc aag aaa ctc ttg aac aag acc aac aag	2112
Tyr Phe Met Ser Ser Thr Leu Lys Lys Leu Leu Asn Lys Thr Asn Lys	
686 691 696 701	
aag gca gcg gag tcc tga agggcc cgtgctcccc acctctcaag gagtctcatg	2166

Lys Ala Ala Glu Ser *
702 707

ccgcaggggtg ctcaagtagct gggctctgttc cccagagcccc ttggggtcac ctgaagtcct 2226
atcaactgccg ctctgccccct ccccatgagc cagatccccc cagtttcttg acgtggagag 2286
tctggggcat ctcttcttta tgccaagggg cgcttgaggt tttcatggct gcccctccag 2346
actgcgagaa acaagtaaaa acccattggg gcctcttgat gtctgggatg gcacgtgggc 2406
ccgacctcca caagctccct catgcttctt gtcccccgct tacacgacaa cggggccagac 2466
cacaggaagg acggtgtttg tgtctgaggg agctgctggc cacagtgaac acccagttt 2526
attcctgcct gctccggcca ggactgaacc cttttttcca caccttgaac agttgggttc 2586
aagggggcac cagaagcatt ctttatt 2613

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<213> Homo sapiens

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<222> (266)..(961)

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cccagaggtcc cgcctcgccc gctgagccgg cctgtaagcg ctgcggagat tgggctagag 120
gcggaggcct gggccacggc ggaggcgctg ggtccttctg gcactcctct ggtggaccgc 180
ccccatcggc cacacttgcc ctgctctcca gtgattctgt agctcctggc tccgtagtct 240
cgcgagacgc tctctttcct ggaag atg ttt ctg gtg ggc ctg aca ggg ggc 292
Met Phe Leu Val Gly Leu Thr Gly Gly
1 5
att gcc tca ggc aag agc tca gtg atc cag gtg ttc cag cag ctg ggc 340
Ile Ala Ser Gly Lys Ser Ser Val Ile Gln Val Phe Gln Gln Leu Gly
10 15 20 25
tgt gcg gtg att gac gtg gac gtg atg gcc cgg cac gtc gtg cag cca 388
Cys Ala Val Ile Asp Val Asp Val Met Ala Arg His Val Val Gln Pro
26 31 36 41

gga tac cct gcc cac cgg cgc atc gta gag gtc ttc ggc act gag gtc	436
Gly Tyr Pro Ala His Arg Arg Ile Val Glu Val Phe Gly Thr Glu Val	
42 47 52 57	
ttg ctg gag aat ggc gac ata aat cgc aag gtc ctg ggg gac ctg atc	484
Leu Leu Glu Asn Gly Asp Ile Asn Arg Lys Val Leu Gly Asp Leu Ile	
58 63 68 73	
ttt aac cag cct gac cgg cgg cag ctg ctc aac gcc atc acc cac ccc	532
Phe Asn Gln Pro Asp Arg Arg Gln Leu Leu Asn Ala Ile Thr His Pro	
74 79 84 89	
gag att cgc aag gag atg atg aag gag acg ttc aag tac ttc ctc cgg	580
Glu Ile Arg Lys Glu Met Met Lys Glu Thr Phe Lys Tyr Phe Leu Arg	
90 95 100 105	
gga tac cgc tac gtg att ctg gat atc ccc ctg ctg ttt gag acc aag	628
Gly Tyr Arg Tyr Val Ile Leu Asp Ile Pro Leu Leu Phe Glu Thr Lys	
106 111 116 121	
aag ttg ctc aag tac atg aag cac acc gtg gta gta tac tgc gac cgg	676
Lys Leu Leu Lys Tyr Met Lys His Thr Val Val Val Tyr Cys Asp Arg	
122 127 132 137	
gac aca cag ctg gca cgg ctg atg cgg cgg aac agc ctg aac cgc aag	724
Asp Thr Gln Leu Ala Arg Leu Met Arg Arg Asn Ser Leu Asn Arg Lys	
138 143 148 153	
gac gca gag gcc cgc atc aat gcc cag ctg ccc ctg aca gac aag gcc	772
Asp Ala Glu Ala Arg Ile Asn Ala Gln Leu Pro Leu Thr Asp Lys Ala	
154 159 164 169	
cgc atg gcc cgc cat gtc cta gac aac tcg ggc gag tgg agt gtc acc	820
Arg Met Ala Arg His Val Leu Asp Asn Ser Gly Glu Trp Ser Val Thr	
170 175 180 185	
aaa cgc cag gtc atc ctc ttg cac act gag ctg gag cgc tcc ctg gag	868
Lys Arg Gln Val Ile Leu Leu His Thr Glu Leu Glu Arg Ser Leu Glu	
186 191 196 201	
tac ctg ccg ctg agg ttt ggg gtc ctc aca ggg ctc gct gcc att gcc	916
Tyr Leu Pro Leu Arg Phe Gly Val Leu Thr Gly Leu Ala Ala Ile Ala	
202 207 212 217	
agc ctc ctc tac ctg ctc acc cac tac ctt ctg cct tac gcc tag tgg	964
Ser Leu Leu Tyr Leu Leu Thr His Tyr Leu Leu Pro Tyr Ala *	
218 223 228	
ggcactcaag gcagggagcc ccaggcctcc atctatctcc ttggaggctg aagccaggta	1024
acacatcctg tttcctctca gccccctcca cacacacaca cacacacaca cacacacaca	1084
cacacacaca cacggactct ccgaatcagg gctgggcctc tgtgccaggc catcccgctc	1144
ttggagtgtg tcctatttga ggtcaagaaa tagcctgctg tccttccac cttccctgag	1204
cagcacctac agaacagcaa ccgtgatggt gtgtgaaagc aacagtcaga gactgctata	1264

catttctgtg ggtgggggta ggggaatactg gctctgtggc cctcctcaga gctgggaggc 1324
caagggttca ctgggcttga atcctctcta agcacctacc ccattgtggc ctaaacctcc 1384
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ctgccagcaa gcagcaagga ttctctcgtg ggtaacgctg tagccaggca ggaccagcct 1564
cttctgggag acccctctcc ccacgtaggg tttgtgtagt gctcccacat cctgcttatt 1624
gcctgccacc cctgcttctc gcctggacct cttggtattc cgtgtacacc atccttgctg 1684
tttcttgccct ctgtgccttc aacctgctgc tcttggcctg ggataccttt tattttcttt 1744
tattttcttct tccttttttt tttcgattgt tgtngnaacc gccacgccat tgctatccct 1804
atatccagtc taagccacag gctcggtgcc tgcgccatta tatcccctag 1854

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<220>
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<222> (107) .. (3343)

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aggctaagtg ggactgaccg gggcccagag tggacgaacc gccagc atg ggg aga 115
Met Gly Arg
1
gac cag cgc gcg gtg gcc ggc cct gcc cta cgg cgg tgg ctg ctg ctg 163
Asp Gln Arg Ala Val Ala Gly Pro Ala Leu Arg Arg Trp Leu Leu Leu
4 9 14 19
ggg aca gtg acc gtg ggg ttc ctc gcc cag agc gtc ttg gcg ggt gtg 211
Gly Thr Val Thr Val Gly Phe Leu Ala Gln Ser Val Leu Ala Gly Val
20 25 30 35
aag aag ttt gat gtg ccg tgt gga gga aga gat tgc agt ggg ggc tgc 259
Lys Lys Phe Asp Val Pro Cys Gly Gly Arg Asp Cys Ser Gly Gly Cys
36 41 46 51
cag tgc tac cct gag aaa ggt gga cgt ggt cag cct ggg cca gtg ggc 307
Gln Cys Tyr Pro Glu Lys Gly Gly Arg Gly Gln Pro Gly Pro Val Gly
52 57 62 67
ccc cag ggg tac aat ggg cca cca gga tta caa gga ttc ccg gga ctg 355

Pro Gln Gly Tyr Asn Gly Pro Pro Gly Leu Gln Gly Phe Pro Gly Leu	
68 73 78 83	
cag gga cgt aaa gga gac aag ggt gaa agg gga gcc ccc gga gta aca	403
Gln Gly Arg Lys Gly Asp Lys Gly Glu Arg Gly Ala Pro Gly Val Thr	
84 89 94 99	
gga ccc aag ggc gac gtg gga gca aga ggc gtt tct gga ttc cct ggt	451
Gly Pro Lys Gly Asp Val Gly Ala Arg Gly Val Ser Gly Phe Pro Gly	
100 105 110 115	
gcc gat gga att cct gga cac ccg ggg caa ggt ggg ccc agg gga agg	499
Ala Asp Gly Ile Pro Gly His Pro Gly Gln Gly Gly Pro Arg Gly Arg	
116 121 126 131	
ccg ggc tac gat ggc tgc aac gga acc cag gga gac tca ggt cca cag	547
Pro Gly Tyr Asp Gly Cys Asn Gly Thr Gln Gly Asp Ser Gly Pro Gln	
132 137 142 147	
ggg ccc ccc ggc tct gag ggg ttc acc ggg cct ccc ggg ccc caa gga	595
Gly Pro Pro Gly Ser Glu Gly Phe Thr Gly Pro Pro Gly Pro Gln Gly	
148 153 158 163	
cca aaa ggg cag aaa ggt gag cct tat gca ctg cct aaa gag gag cgc	643
Pro Lys Gly Gln Lys Gly Glu Pro Tyr Ala Leu Pro Lys Glu Glu Arg	
164 169 174 179	
gac aga tat cgg ggt gaa cct gga gag cct gga ttg gtc ggt ttc cag	691
Asp Arg Tyr Arg Gly Glu Pro Gly Glu Pro Gly Leu Val Gly Phe Gln	
180 185 190 195	
gga cct ccc ggc cgc cct ggg cat gtg gga cag atg ggt cca gtt gga	739
Gly Pro Pro Gly Arg Pro Gly His Val Gly Gln Met Gly Pro Val Gly	
196 201 206 211	
gct cca ggg aga cca gga cca cct gga ccc cct gga cca aaa gga cag	787
Ala Pro Gly Arg Pro Gly Pro Pro Gly Pro Pro Gly Pro Lys Gly Gln	
212 217 222 227	
caa ggc aac aga gga ctt ggt ttc tac gga gtt aag ggt gaa aag ggt	835
Gln Gly Asn Arg Gly Leu Gly Phe Tyr Gly Val Lys Gly Glu Lys Gly	
228 233 238 243	
gac gta ggg cag ccg gga ccc aac ggg att cca tca gac acc ctc cac	883
Asp Val Gly Gln Pro Gly Pro Asn Gly Ile Pro Ser Asp Thr Leu His	
244 249 254 259	
ccc atc atc gcg ccc aca gga gtc acc ttc cac cca gat cag tac aag	931
Pro Ile Ile Ala Pro Thr Gly Val Thr Phe His Pro Asp Gln Tyr Lys	
260 265 270 275	
ggt gaa aaa ggc agt gag ggg gaa cca gga ata aga ggc att tcc ttg	979
Gly Glu Lys Gly Ser Glu Gly Glu Pro Gly Ile Arg Gly Ile Ser Leu	
276 281 286 291	
aag gga gaa gaa gga atc atg ggc ttt cct gga ctt agg ggt tac cct	1027
Lys Gly Glu Glu Gly Ile Met Gly Phe Pro Gly Leu Arg Gly Tyr Pro	

292	297	302	307	
ggc ttg agt ggt gaa aaa gga tca cca gga cag aag gga agc cga ggc				1075
Gly Leu Ser Gly Glu Lys Gly Ser Pro Gly Gln Lys Gly Ser Arg Gly				
308	313	318	323	
ctg gat ggc tat caa ggg cct gat gga ccc cgg gga cct aag gga gaa				1123
Leu Asp Gly Tyr Gln Gly Pro Asp Gly Pro Arg Gly Pro Lys Gly Glu				
324	329	334	339	
gcc gga gac cca ggg ccc cct gga cta cct gcc tac tcc cct cac cct				1171
Ala Gly Asp Pro Gly Pro Pro Gly Leu Pro Ala Tyr Ser Pro His Pro				
340	345	350	355	
tcc cta gca aaa ggt gcc aga ggt gac cca gga ttc cca ggg gcc caa				1219
Ser Leu Ala Lys Gly Ala Arg Gly Asp Pro Gly Phe Pro Gly Ala Gln				
356	361	366	371	
ggg gag cca gga agc cag ggt gag cca gga gac ccg ggc ctc cca ggt				1267
Gly Glu Pro Gly Ser Gln Gly Glu Pro Gly Asp Pro Gly Leu Pro Gly				
372	377	382	387	
ccc cct ggc ctc tcc att gga gat gga gat cag agg aga ggc ctg ccg				1315
Pro Pro Gly Leu Ser Ile Gly Asp Gly Asp Gln Arg Arg Gly Leu Pro				
388	393	398	403	
ggt gag atg gga ccc aag ggc ttc atc gga gac ccc ggc atc cct gcg				1363
Gly Glu Met Gly Pro Lys Gly Phe Ile Gly Asp Pro Gly Ile Pro Ala				
404	409	414	419	
ctc tac ggg ggc cca cct gga cct gat gga aag cga ggg cct cca gga				1411
Leu Tyr Gly Gly Pro Pro Gly Pro Asp Gly Lys Arg Gly Pro Pro Gly				
420	425	430	435	
ccc ccc ggg ctc cct gga cca cct gga cct gat ggc ttc ctg ttt ggg				1459
Pro Pro Gly Leu Pro Gly Pro Pro Gly Pro Asp Gly Phe Leu Phe Gly				
436	441	446	451	
ctg aaa gga gca aaa gga aga gca ggc ttc cct ggg ctt ccc ggc tcc				1507
Leu Lys Gly Ala Lys Gly Arg Ala Gly Phe Pro Gly Leu Pro Gly Ser				
452	457	462	467	
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Arg Cys Thr Glu Gly Asp Glu Ala Ile Lys Gly Leu Pro Gly Leu Pro				
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Asp Lys Gly Asp Pro Gly Gln His Gly Leu Pro Gly Phe Pro Gly Leu				
516	521	526	531	

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Lys Gly Val Pro Gly Asn Ile Gly Ala Pro Gly Pro Lys Gly Ala Lys	
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Gly Asp Ser Arg Thr Ile Thr Thr Lys Gly Glu Arg Gly Gln Pro Gly	
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Val Pro Gly Val Pro Gly Met Lys Gly Asp Asp Gly Ser Pro Gly Arg	
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Asp Gly Leu Asp Gly Phe Pro Gly Leu Pro Gly Pro Pro Gly Asp Gly	
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Ile Lys Gly Pro Pro Gly Asp Pro Gly Tyr Pro Gly Ile Pro Gly Thr	
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Lys Gly Thr Pro Gly Glu Met Gly Pro Pro Gly Leu Gly Leu Pro Gly	
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Asp Ala Gly Arg Glu Gly Phe Pro Gly Pro Pro Gly Phe Ile Gly Pro	
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Ile Pro Gly Leu Pro Gly Phe Pro Gly Val Ala Gly Pro Pro Gly Ile	
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Thr Gly Phe Pro Gly Phe Ile Gly Asn Pro Leu Leu Gly Arg Pro Met	
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208	213	218	223	
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Trp Val Thr Ser Asn Arg Asp Pro Pro Ile Phe Ser Ala Gly Val Lys				
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Ala Val Ser Asp Ser Ala Ser Lys Ser Cys Val Pro Ser Arg Asn Cys	
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Leu Asp Leu Tyr Glu Glu Ile Leu Thr Glu Glu Gly Thr Ala Lys Glu	
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Ala Thr Tyr Asn Asp Leu Gln Val Glu Tyr Gly Lys Cys Gln Leu Gln	
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Met Lys Glu Leu Met Lys Lys Phe Lys Glu Ile Gln Thr Gln Asn Phe	
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Ser Leu Ile Asn Glu Asn Gln Ser Leu Lys Lys Asn Ile Ser Ala Leu	
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Arg Ser Pro His Leu Asp Asp Cys Ser Lys Thr Asp His Arg Ala Lys	
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Ser Asp Val Ser Lys Asp Val His His Ser Thr Ser Leu Pro Asn Leu	
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